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JOURNAL
OF THE
ASIATIC SOCIETY OF BENGAL,

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VOL. XXI.

Nos. I. TO VII.—1852.

“It will flourish, if naturalists, chemists, antiquaries, philologers, and men of science, in different parts of *Asia*, will commit their observations to writing, and send them to the Asiatic Society at Calcutta. It will languish if such communications shall be long intermitted; and it will die away if they shall entirely cease.”—SIR WM. JONES.

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1853.



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* Withdrawn by the author, as irrelevant to his paper on the Dust Whirlwinds.

† Not received vide Note at the foot of page 621.

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* Not received : vide note at the foot of page 621.



JOURNAL

OF THE

ASIATIC SOCIETY.

No. VI.—1852.

*Analysis of the Raghu Vans'a, a Sanskrit Poem of Kálidása.—By the
Rev. J. LONG.*

In reading through this exquisite poem in the original last year, and enjoying that delight which arises from the perusal of genuine poetry, whether the soil that produced it be India or England, I felt strongly the need there is of a guide to popular Sanskrit books, pointing out their chief design and giving an outline of their contents. The names of *Mágha*, *Bhaṭṭi*, may sound familiarly to the ear, but where are we to find a programme of their contents? To meet this desideratum with respect to one book, I here submit an analysis which I made on my perusal of this splendid monument of Kálidása's genius—it is merely designed to show the drift of the poem and the subjects brought forward—as none but a poet can do full justice to a poet's style. It is contributed as a mite to the important cause of Sanskrit literature.

The poem of Raghu Vans'a celebrates the glories of the race of Ráma of the Solar line, while the Mahábhárata, the great Indian Epic, presents us with a lively portrait of the varied adventures of the Pándus who gloried in being "the children of the moon." The Raghu Vansa ranks among the *Mahá Kávyas* or six great poems, and has been distinguished for the beauty of its similes and the power of imagination displayed by the Indian Shakspeare, Kálidása, who exemplifies in his writings the truth of Coleridge's remark "the great book of nature has been the music of gentle and pious minds in all ages."

A Latin translation was published by Stenzler in 1832, but by aiming at strict literality, the spirit of the poem has been almost extinguished in the letter. His Latin style is very inelegant and very deficient in perspicuity, so that it is sometimes almost as difficult to ascertain the meaning of the translation as of the original. It retains to a great extent the absurd system of the paṇḍits in grouping a number of words together.*

To Kālidāsa has been assigned the title of the Indian Shakspeare on the authority of that prince of critics, Sir W. Jones. Schlegel writing of Kālidāsa's works, remarks: "the Drama of Sakuntala presents through its oriental brilliancy of colouring, so striking a resemblance on the whole to our romantic Drama, that it might be suspected the love of Shakspeare had influenced the translator, if other orientalists had not borne testimony to the fidelity of the translation." Shakspeare was once as little noticed as Kālidāsa is now, but with the advance of Oriental literature he is destined "to emerge into universal celebrity." Both Kālidāsa and Shakspeare brought the Drama to perfection out of their own original stores, independently of all models of Grecian authors. In the case of both "their lives remain almost a blank, and their very name a subject of contention." Shakspeare was neglected in England during the period of the Commonwealth, when the liberal arts and literature were proscribed as if opposed to Christianity, but to use the beautiful language of Schlegel "his fame was awhile obscured only to shine forth again about the beginning of the last century with more than its original brightness, and since then it has but increased in lustre with the course of time; and for centuries to come, it will like an Alpine Avalanche continue to gather strength at every moment of its progress." So will it be with Kālidāsa: the educated natives of this country are now all seized with Anglo-mania, as were our forefathers with the classic mania, but the time is rapidly coming when the importance of forming a vernacular literature on the Oriental model will be felt, and as Germans brought prominently to view *in England* the beauties of Shakspeare, so probably will European Orientalists bring in India those of Sanskrit literature.

There is one class of persons in this country, however, on whose ears

* In 1849, a translation of the Raghu Vansa was made into modern Greek and published by Mr. Typaldo, Ephore of the Library at Athens.

the name of *Kálidása* strikes no responsive chord : we refer to those called "Young Bengal," and to the *alumni* of English Colleges : we quote the sentiments of a native writer in an able paper on the Dramatic Literature of the Hindus, published in the Calcutta Literary Chronicle. "While the Hindu youth should enrich his fancy with Shakspeare's images, and strengthen his intellect by Bacon's aphorisms, it runs to his scandal, that he should neglect the language and literature of his own country. The most advanced students in English literature have evinced a profound ignorance of Hindu poetry and science, and some have added to the faults of negligence and inattention, the crimes of misrepresentation and caricature."

We now proceed to our analysis of the Raghu Vansa ; we shall adhere as closely as possible to the mould of expression of the original :—

The subject of this poem treats of the race of Raghu who duly kept the sacred fire,* collected wealth for the sake of distributing it, and sought marriage solely to obtain offspring : let the good who are arbiters of vice and virtue, as fire is of gold, deign to hear the account. From Vaivasvata the seventh of Manu's line, the first of kings, as *Om* is first of words, sprang Dilip, the moon to kings as is the moon to the milky sea, with breast like a bull and arms like the *sálá's* boughs ; yet his intelligence equalled his physical strength ; he was the subject both of awe and admiration to his subjects. Dreaded yet loved, like ocean's depths at once with pearls and monsters filled. 'Twas for his people's good alone his royal revenues were collected as the sun drinks earth's moisture up to pour it back a thousand-fold.

He preserved his power by two means. With a mind much versed in the holy books, and his good old age occupied in learning and devotion, old age came on him without decay. He was the father of the people : their natural fathers only gave them birth : robbery existed only as a tale that is told : a distinguished man, though a foe, was prized by him as medicine is by a sick man, while he rejected a bad man, though a relative, as a finger bit by a serpent. Earth girdled by its ocean fine he governed as a town.

* The *Agnihoma* or oblation of fire is not observed now in any part of Bengal : Raja Krishṇa Ray of Nuddea was the last we have heard of who engaged in it. It was one of those links which probably connected primitive Hinduism with the Sabæan system of Persia.

But Sudakhinā, his consort, of the royal line of Magadha, was greatly beloved ; the king, however, mounted on the chariot of desire, longed to have another self produced from her. In order to obtain a son therefore, he laid the burden of his state affairs on the shoulders of his ministers, and accompanied by his queen proceeded to the hermitage of Vashishṭa. Blessings were poured upon them from the towns which they had ruled, the old herdsmen came with their presents of fresh butter, while the royal pair questioned them on the names of the trees which lined the roads. They moved in spotless beauty as the moon with Chitrā, beaming in a pure and cloudless heaven.

* O'er them played the blissful breezes, breathing Shāla's odours round,
Fell the fragrant flower-dust o'er them, danced the rows of forest trees :
Pleased they heard the peacocks' voices, shrill resounding on the way,
Still, as rolled the sounding chariot, lifting up their heads to gaze :
Steadfast on the chariot looking pairs of antelopes they saw,
In whose large and glossy eyeballs mirrored they themselves appeared,
In a line the cranes were flying, gently murmuring overhead
Like an arch enwreath'd with garlands, baseless, hanging in the sky,
Softly swept the breezes with them, ominous of good success.

The king beguiled the journey in pointing out different objects to his spouse, and in the evening arrived at the hermitage, where holy Rishis were piling wood and fruit and kusā grass, which they brought from the forest's depths ; the entrance was thronged with deer ruminating as familiarly as if they had been the Rishis' children : while the Muni's daughters watered the trees speedily, lest their presence should scare away the birds.

“ By the sacred offerings, odour, and the smoke the breeze conveyed,
From the holy fire there blazing, they were purified anon.”

The royal pair clasped the Muni's feet, and received a blessing. The king then proceeded to state the sources of his grief, through want of a son.

* These lines are from a Metrical translation of the 1st book made by the Rev. J. Mitchell, one of the few Missionaries in India who have any acquaintance with Sanskrit, a language which is the keystone to the Hindu religion and usages, the knowledge of which gives weight to Europeans among natives, and which is the parent of the chief Indian Vernaculars and the fount for technical terms.

Yet what is Earth to me with all its lovely isles, its precious gems,
 When never from thy daughter here, a child—another self—has sprung.
 The Manes of my fathers see the Shraddhá's offering must expire ;
 Scarce can they now partake, hut turn in sorrow from the sacred cake,
 And all the holy water too, which I have poured, must cease to flow :
 Foreseeing this they drink it now, all tepid by their woeful sighs."

The Rishi having heard, remained fixed for a short time in meditation,—still as a lake in which the fishes enjoy the repose of sleep,—and thus replied : Thou wert once returning home to thy wife after worshipping Indra and seeing Surábhi resting under the shade of the *Kalpataru*, thou didst not pay her honour due ; on this she pronounced a curse, "Be without offspring until you learn to respect mine." The curse was not heard by thee owing to the noise made by the elephants splashing in the waters of the heavenly Ganges, thou canst not now see Surábhi as she dwells in Pátála guarded by fierce serpents, but respect her offspring as her substitute. As he finished, Kámadhenu* the offspring of Surábhi made her appearance emerging from the forest depths, when called by name.

' Brown was her hue, all beautiful, soft, polished, like the freshest spray ;
 Gleamed on her forehead a white mark, as the new moon in twilight gleams."
 "The dust excited by her hoofs the body of the monarch touched,
 And gave a purity as if the king had bathed in holiest spot.†

The king was directed to conciliate Surábhi in every possible way.

Move onwards, when she moves : whene'er she rests, rest thou beside her there ;
 Recline, when she is pleased to couch : drink, wheresoe'er thou seest her drink,
 And to the horder of the wood, let thy queen also follow her,
 With punctual care, at noon : and so, still meet her in the eventide.

The king and queen soon after retired to repose in a hut of leaves where Kusá grass bestrewed the floor.

At early dawn the cow proceeded to the forest, the queen followed her

* *Kámadhenu* the cow of plenty : like "the wishing cap" of fairy tales, she could give whatever was asked.

† This reminds one of the Mohammedan notions, that if water is not at hand to perform an oblation, sand will suffice, just as the Hindus burn their dead on the banks of the old Ganges near Baripur to the South of Calcutta though there is not a drop of water in the ancient bed.

track, the dust of which was consecrated by her hoofs, as the Smṛiti follows the Vedas, so the lord of the earth, having his hair fastened with braids made from creeping plants, followed the cow like a shadow, stopping where she stopped, sitting where she sat, fetching water for her, presenting her with wisps of grass and guarding her from noxious flies : at his approach the trees joined in acclamation mingled with the songs of birds ; the tender creeping plants waving in the wind shed flowers on him ; the deer beheld him without dismay : the woodland gods sang his praise in reeds inflated by the wind in their shady recesses : while the breeze charged with the odour of the waving trees and moistened by the drops of water from the mountains, breathed on him in a refreshing stream : the flowers sprang up at his feet, while the beasts of the forest abandoned their ferocity. At sunset the cow returned, the Rájá following behind, like works accompanying faith ; the lands were gradually becoming shrouded in darkness, while herds of boars ascended from the jheels, peacocks were looking for their aerial nests, and stags were assembling on the grassy meads. The queen drank in with eager eye the approach of the king, while the cow shone between both as day mid morn and night. Thrice seven days thus passed in attendance on the cow : one day as she was browsing near Gánga's banks, a ravening lion sprang from a cavern's mouth and carried her off. The moanings of the cow drew the attention of the king, who immediately bent his bow, but his right hand remained as immoveable, as if it had been a mere picture. Though obstructed in his efforts the king's wrath burned as fierce within, as that of a snake whose poisonous power is restrained by incantations and herbs. The lion then addressed the banner of the line of Manu in these words : " Protector of the earth, vain is thy effort, the wind can uproot the forest trees, but cannot move the mountain top. I am Kumbhodara, you see the Devadáru tree before you which was once adopted by S'iva, but her bark being once rubbed by an elephant's forehead, I have been transformed into a lion in order to scare away wild elephants." The king offered to satisfy the cravings of the lion's hunger by giving his own body, provided he would release the cow, but this the lion with teeth glistening so bright as to disperse the darkness of the cavern, firmly refused, saying, O Lord of animals, it is far better that one cow should be slain than that the

father of his people should perish. The mountain also by the echo from its hollow caverns responded to the same opinion, but the ruler of earth moved by the wistful looks of the cow, answered her thus: as a protector from death, the *Khshatrya* won his high name through the world, what has he then to do with life when his soul is tarnished by dishonour? if you wish not to slay me, yet have regard to my fame; so saying he presented his body as an offering to the lion; at that instant the *Vidyádharas* from the skies rained flowers on the guardian of his subjects as with averted face he awaited the onset of the lion, and a voice sweet as nectar said, Arise, my child; he saw only the cow before him who said, I have tried thy mercy and fidelity by the spectral appearance of a lion, mention now thy wishes. With clasped hands the monarch replied: Grant me a son, the propagator of my race and endowed with immortal fame. The cow assented, and directed him to drink her milk from a leafy vessel. The king of kings with face radiant as the moon returned to the hermit's cave and to his spouse communicated all concerning the proffered favours. In obedience to Vashishṭa's order he drank the milk left by the calf; after the performance of the sacrifice to their own capital they returned on the morrow's dawn, having previously paid reverential salutation by an oblation to Agni and Arundhati, the calf and cow. As they sped on their way, their ears were soothed by the sound of the chariot as it proceeded in its course; with waving banners the citizens joyfully welcomed them, their eyes drinking eagerly of bliss in beholding the king with body emaciated from desire of offspring, who appeared to his subjects as the rising moon, the monarch of the herbs. The queen soon conceived to the joy of her subjects.

Sudakṣiṇá gave signs of pregnancy joyful to her husband as the face of the rising moon to friends; with features pale as the *lodhra* tree, she appeared as night on the approach of morn, when the moon gives a sickly ray and the stars can be numbered in the sky; all her longings were gratified by the monarch of Aude, who regarded his wife in her pregnant state like the Sami tree charged with hidden fire or the stream of Saraswatí, which winds its way beneath earth's surface; she increased in size like the heaven charged with clouds ready to burst in fertilizing showers. On the birth of a son the celestial quarters shone with auspicious light, the gales

wafted a sweet fragrance, the fire in waving flames towards the right consumed the holocaust, while all things boded felicity on the birth of one who was to be the deliverer of the world. With eyes immoveable as the lotus sheltered from the breeze, the lord of the world drank rapture from the face so fair of his son, nor could he control himself any more than ocean's massy waves on seeing the queen of night the moon.* The natal ceremonies being finished by an anchorite brought from the sacred wood, Dilip's son shone out as a gem dug from the stone, with radiance issuing from the polisher's hand: a general gaol delivery was proclaimed: he named him Raghu signifying he should go to the conclusion of the Vedas, and the despatching of the enemies.†

After the ceremony of the tonsure, Raghu entered by a knowledge of letters as through the mouth of a river into the ocean of words; as the sun with his horses swift as wind passes through the regions of air, so he passed through the four sciences of Logic, Ethics, History and the Vedas.‡ He was soon married and the king relieved his shoulders of some of the burthen of state affairs by making him co-ruler. One day while making a sacrifice of a hundred horses, Indra carried off the horse by the power of Nandini. Raghu acquired the faculty of seeing invisible things, and he immediately recognised by his hundred eyes unblinking, and his green steeds, that the spoiler was Indra, he addressed him on the evil he had done, but Indra replied that he alone was entitled to sacrifice one hundred horses. On this a battle fierce ensued, arrows flying about in all directions horrid as the view of serpents winged. Indra with his shower of arrows tried to kill him, but as vain as the cloud by its waters strives to extinguish the lightning which has issued from its bosom. The combat lasted long, and Indra admiring his valour promised to give him whatever he would ask except the horse. Raghu returned home. Dilip determined to ascend to heaven on a ladder made from the merits of his ninety-

* This seems to imply some knowledge of the laws of attraction. A similar passage occurs in the Raj Tarangini. When we consider the mode in which the mysteries of knowledge were shrouded from the vulgar eye in ancient times, it is not improbable the law of gravitation may have been one of those known to the priests.

† Respecting the naming of children, see Manu II. 30.

‡ Like the *quadrivium* of the middle ages.

nine sacrifices, therefore recalling his mind from sensible objects, he delivered the white umbrella to his son and according to the vows of the family of Iksháku, when the days of youth melt away, he entered with his wife the forest shades where holy Munis dwell.

Raghu in possession of his paternal throne shone illustrious, as at the close of day does fire receiving the rays deposited by the solar orb; when the kings heard that he had been established on the throne; the fire of affection before wrapped in smoke, burst forth into flames: now Lakshmi canopied him with her lotus-made umbrella. The citizens rejoiced in his advent as if Indra's banner had been unfurled: he was a general favourite on account of the justice of his punishments, equable as the south breezes, neither hot nor cold. As in possession of the Sakakár (a fragrant mango) the loss of flowers remains unfelt, so did the citizens' regret towards the sire. Raghu though gifted with an acute power of vision from eyes which stretched towards the cars, yet possessed still greater from books, which indicated things the most minute. On his countenance lighted up with a glow of kindness men gazed as on the full orb moon, while his beauty surpassed autumn with its lotus-shades and fans of budding grass. Women reclining under the sugar-cane's shade sang his praises, commencing with his natal time. As tranquil moves the ocean after Agastyá's rise, so trembled the enemies on the appearance of Raghu.

Autumn rendering the rivers fordable and drying up the muddy paths, incited him to undertake an expedition. The waving flames on the right, arising from the sacrificial lustration of horses, as if with outstretched hand, presented to him victory. Raghu, having then fortified his city, set out with veteran troops on the conqueror's route. On beholding him the city matrons besprinkled him with grain as the drops of water from the milky ocean fall on Vishnu, raised by the power of Mandára Mount. Like Indra, his first march was towards the East, daunting the enemy with banners waving in the wind; with the dust of his chariots and his cloudlike elephants he blended earth's soil with the sky; the barren deserts flowed with streams, the rivers gave way as with his mighty troops he moved to the East, like Bhagiratha conducting Gánga's stream from S'iva's head. As by the march of elephants the trees lay strewed and scattered all around, so lay the monarchs whom he encountered in his route: conquering all the

Eastern regions, he arrived on the shores of the mighty ocean darkling with the palm trees' shade. The Suhmi bending to the conqueror as reeds to the torrent's fury, escaped destruction. Having conquered the Bengalis who trusted in their ships, he erected pillars of victory on the islands of the Ganges.

Having passed the Kapisá river by elephants, under the guidance of the people of Utkál (Orissa) Raghu arrived at Kalinga. Mount Mahendra received from him a shock, as from the Mahut's goad the stubborn elephant's head. Kalingá's monarch mighty in elephants in vain attacked Raghu, like Indra attempting to cut his wings. The soldiers decorating the place with betel leaves, toasted their success in wine of Nálikera; but Raghu desiring victory only for the sake of justice took possession of no land. Then to Agastya's land he marched skirting the shore, fringed with fruitful betel palms. The soldiers occupied the plain to the foot of the Malaya hills where doves flit in spicy groves. The elephants had their temples fragrant from the dust of sandal wood which they had raised in their march. The Pandu kings rendered homage to Raghu by gems collected from the ocean's bed where Tamráparna rolls its waves. Having refreshed himself near the shore on the Malaya and Dardura sandal-covered hills, the paps of earth, he lined with troops the Sabya hill, from which ocean had retired far and left earth's bosom bare; the soldiers then marched on to subdue the Western people. The dust from the Ketak tree raised by the winds from the Mural river served to polish the soldier's armour, the tinkling coats of mail drowned the sound of the betel trees agitated by the wind. Old ocean retired at Ram's request, but to Raghu she gave as her tribute dominion over Western kings. The Trikuta mount cut by the tusks of maddened elephants afforded victory pillars.

In his battle with the Western people he could only recognise the enemy by the twang of the horny bow, so dense the dust lay round. The bearded heads strewed thick the ground. In vineyards fair the soldiers wearied with warfare refreshed themselves with wine. To the region of Kuvera the monarch proceeded; he carried off the people by his arrows which dispersed them as rapidly as the sun the water by his rays. His horses refreshed themselves on the banks of the Sindhu; the people of Kamboj were as little able to stand his charge in battle

as the *Akshodh* trees to resist the elephant's mighty force. Raghu ascended the summits of Gauri's parent (Himalaya) which seemed loftier from the clouds of dust raised by the march of his troops; the winds whispering through the reeds, wafted drops of Ganges water: the herbage at night by its brilliancy served the soldiers instead of lamps. In Raghu's battle with the mountain tribes fire flashed from the concussion of spears and arrow-heads. Raghu passed by Lauhitya, the lord of the *Pragjyotish* trembled, he then proceeded thence to Kámarup, the Rájá of which presented him with elephants and laid oblations of gems at his feet. On his return the dust of chariot wheels fell on captive kings umbrella-less, he distributed all his wealth among the Bráhmaṇs; as the good, like clouds, only receive to give again.

By him whose age succeeded to childhood, the night was spent sleepless, anxious to possess that gem of a girl: early in the morning he was roused by the songs of the *Vaitálíka* chaunting "Oh king, fair as the moon, the moon is setting; yonder the sun arises, expand your pupils which move so beautiful in the eyes, as the bee amid the lotus flower of lovely eyelids fair. Aja rises and dressed in suitable costume he entered the Hall of Election.

Aja entered the assembly of kings, brilliant as forked lightning amid a range of resplendant clouds, or as the Kalpa Druma among the lesser trees of paradise, the eyes of all were fixed on him. Immediately after amid lines of monarchs of the solar and lunar race, with clouds of waving incense and the clang of trumpets—entered the bride in her four-wheeled chariot in nuptial vest arrayed; on her, the fairest of Bráhma's creatures, the minds of one hundred kings were fixed, their bodies alone remained on their thrones.

Then Sunandá, guardian of the Antapura, in manly accents introduced to Indumati the king of Magadh, "Protector of the poor, the justest king on earth, as night, though fair with thousand stars, by luna only is illuminated, a perpetual worshipper of Indra. If O Queen, you give him your hand, you will present an oblation of joy to the eyes of the ladies of Pushpapura, sitting to gaze at you from the windows of the palace." But without words, by a nod with unbent body, the Virgin, from whose head the faded chaplet of Madhuka had fallen, to him refusal gave. Then the holder of the cane, as the wavy line of water

raised by wind bears the swan in Mánasa lake to another lotus, conducted the royal maid to another unsuccessful suitor, the king of Anga, famed among the immortals for his beauty, whose elephants were tamed by men who have written a code of instructions on the subject.

Next came, bright as the risen moon, Avanti's lord, of long arms broad chest and slender waist, noted for the line of kings that followed in his conquering train. He like the sun on lotus flowers shed the rays of his favours on his friends, but withering looks he gave to his enemies as the sun dries up the muddy lake. To him succeeded the king of Anurupa Kártavirjya the conqueror of Rávana, but he was as little acceptable to the maid as in autumnal time the lunar orb to lotus beds. Him followed the king of Srusena, the abode of virtue ; in his house his beauty was as pleasing as the lunar beams to the eyes, but as a river in its flow to the ocean passes by the mountain in its course, so the royal maid passed over the Rájá.

Him followed Kalingá's monarch, lord of Mahendra, whose arms retain the traces of the twanging bow, a dweller on the ocean where the dashing waves, louder than the trumpet sounding the hours, gleaming through the windows, awake from sleep ; the shore resounds with the rustle of palm leaves, while from other isles the winds waft the fragrance of the groves of clove—he was rejected. Next came Páñdu's king with garlands decked of yellow sandal leaves, as Himálaya, king of mountains, tinged with the rays of the rising sun, but he made no more impression on the maid than the lunar ray on lotus leaves, unclosed, save when the sun appears.

When the torch of the maid's presence was held up to a suitor, he was cheered, but on her passing by he sunk again into the darkness of despair. As she came to Raghu's son, he stood in suspense which was soon removed by the agitation of her right hand. As bees once lighting on the *Sahakár* tree desire no other, so the maid allowed no other monarchs to approach. Sunandá now announced the ancestry of Aja, " Sprung from Dilip, the light of his race : during his reign there was such security that not even the breeze would disturb the garments of a woman sleeping on the high road, much less would a man extend a hand of violence : his son Raghu gave away for religious objects all his store of wealth having only earthen vessels left, his glory reached the skies and ocean's deep recesses, from him is Aja sprung, a suitable

match for you : let the diamond be joined with gold." The maid, her countenance radiant with love, as with the bridal garland accepted the youth ; unable to speak, her wishes were expressed by the erection of her hair through pleasure ; on the youth's neck she placed the yellow garland fair. " Behold the rains of the lunar orb joined with the moon free from clouds. Behold Gānga mixed with the ocean, receptacle of waters ;" such exclamations burst from all the citizens. On one side stood the joyful friends of the bridegroom, on the other the gloomy circle of kings, the assembly resembled a lake where at early dawn the lotus blooms, while the waterlilies are buried in slumber.

The royal pair entered the streets of Vidarbha which were strewed with branches of trees and shaded from the heat by martial banners. The women having left their other occupations, crowded to the windows to gaze, all their senses were concentrated in the eye ; Bhoja Rájá of Vidarbha having handed down Aja from an elephant, conducted him into the house, and seated him on a throne, loaded him with diamonds, the *Argha* and *Madhuparka*, a pair of silken garments, which having put on, Aja went to Indumati, drawn as is the ocean's wave to shore, by the influence of the lunar orb. Then the priest of Bhoja, having offered ghi and other things to Agni, which he made a witness, united the pair in wedlock. The bride of partridge eyes cast grains into the flames, from which a wreath of smoke arose encircling her ears as with a garland fair. The royal pair mounted on a golden seat were sprinkled with moistened grains by heads of families and aged matrons. The rejected kings hiding their wrath under the guise of joy, resembled a tranquil lake beneath whose surface alligators lurk. Bhoja Rájá accompanied Aja for three days and then returned. The rejected kings then anxious to carry off the jewel bride, beset king Aja's way, who received the attack of his royal foes as Sone with swelling waves mingles with Bhagirathi's stream ; then foot met foot, horse horse, and chariot chariot, each engaged in single combat. The lineage of the combatants could not be heard by the trumpeter's voice, but written on the arrows they were announced to the foe.

Clouds of dust wrapped in a veil the sun ; fish-emblazoned banners imbibing this dust appeared as real fishes drinking turbid water. In this darkness arising from dust obstructing the path of the eyes, the blood flowing from the wounds of horses, men and elephants, which resembled

the solar orb newly risen. The heads cut off by arrows appeared as fruits cut from the stalks; the fallen helmets strewed the ground as cups with blood bedewed, the battle field appeared a banquet of the dead. Host encountered host, like ocean's swelling waves impelled by winds in front and rear; as smoke dispelled by wind, so fled the troops of Aja Rájá, but he stood firm as a fire inkindled, checking the band of kings as a mighty boar the ocean's flood in the Kalpa Yuga. With royal heads he strewed the ground whose lips in anger bit retained a reddened flush. His car with weapons pierced, he was only to be known by its top, as the dawn of day on a morning when the solar orb has just arisen. Applying shell to mouth Aja blew the blast of victory; his coward soldiers heard the sound of the Rájá who appeared among conquered kings as the moon glittering in the midst of sleeping lotuses. With arrows dipped in royal blood Aja wrote on the banners of the conquered foe: "To-day by Raghu's son ye are bereft of glory, but through his clemency not of life." Indumatí's countenance freed from fear of the enemy resumed its wonted brightness, as a mirror when the vapour of the breath has passed away; though full of joy, yet overcome with shame, she addressed not her beloved herself, but through the voice of friends, as the earth watered with recent rain addresses the clouds through the cry of peacocks. Aja placing his left foot on the necks of the kings, led away his bride to receive the salutation of Raghu, who then retired to the forest; for those of the solar race when they find a prop to their family, no more remain in domestic life.

Then Raghu to his son who wore the marriage thread, delivered up the earth. Aja's piety and military spirit united, resembled fire and wind conjoined; the long-armed king as a new wedded bride enjoyed the rule of earth. Each citizen thought himself the special object of the monarch's love, none felt himself neglected, as ocean receives within his embrace a hundred rivers. In moderation neither too strict nor too soft, he governed other kings, as breezes bend the trees, but do not eradicate them. Raghu like Dilip's sons, designed, in dress of bark arrayed, to seek the hermits' cooling shades, but Aja with pearl encircled crown entreated him to desist; but as a serpent his slough resumes not again, so he his regal power; entering the fourth order he dwelt with senses subdued without the city's walls, his sun had set

and Aja's risen in the firmament. Aja to re-acquire an invincible kingdom associated himself with ministers skilled in politics ; Raghu to attain a kingdom undecaying in the skies united himself to holy men. The one to look after the welfare of his subjects occupied the seat of judgment, the other to devote himself to meditation occupied the seat purified by kusa grass. The one by his power reduced kings beneath his sway, the other by meditative power subdued the five airs of his body. Aja exercised the six royal qualities Sandhi, bigraha, jána, ásanna, daidhya, áshray ; Raghu achieved the three qualities, satya, raja, tama, and esteemed gold equal to clay. Raghu thus passed a few years viewing terrestrial things with indifferent gaze until by the force of sacred meditation he attained to the Supreme Purusha (Spirit) dwelling beyond darkness ; his son paid the last rites to his remains which were interred.* Shortly after this was born Das'aratha, bright as the sun, the father of Ráma. Aja when by the study of the Vedas, by sacrifice, and a son, he had discharged his debts to the Rishis, Gods and Pitris, shone forth as the rays of the sun free from eclipse ; he used his power to free the wretched from fear ; not merely his wealth but his virtues were at the service of others. As Indumatí walked with her husband in a grove, she fell dead on the spot. The husband clasping to his bosom his lifeless spouse appeared as the moon at morning tide covered with spots, as iron becomes soft by heat, so lost he his native courage and made the following lament : ' A garland soft my wife has killed, thus death destroys the soft by soft : as I have seen the lotus killed by liquid snow ! Why, without bidding me farewell, have you departed into another world from whence you will not return ? not as yet has the perspiration from my embrace been dried up from your forehead, and thou art dead, alas ! the unsubstantial nature of the body ; thy speechless face covered with dishevelled locks, torments me like the solitary lotus sleeping at night in which the bee has ceased its hum. Oh beloved, awake and dispel my sorrow, as the plant the midnight darkness of the caverns in the Himálayan mount ; the wind waving thy locks entwined with flowers, casts on my mind

* The Hindu notion is to *burn* the bodies of ordinary persons as fire is considered to purify them, but the corpses of Yogis or devotees are not burnt as being considered purified already.

a hope of thy return. Night after its separation returns to the moon, its mate to the Chakraváka, but thou wilt never return, thy tender limbs were hurt reclined on a bed of freshly gathered leaves, how will they bear the funeral pyre? Thy lively voice thou hast left behind with the kokils, thy amorous gait with the swans, thy trembling looks with the stags, thy mirthful gestures on the plants gently agitated by the wind. Thou hadst resolved to unite in wedlock the Sabakár and Priyanga trees,* but thou hast departed without completing the ceremony. The Asoka tree pouring forth its leaves like flowers, remembers the pressure of thy feet. Pleasure has departed, the song has ceased, the seasons are without song, the need of song has ceased and my bed is deserted. O wife of my house, companion, friend and loved pupil in song, what has not been snatched away by death which has taken you away, all my pleasures were seated in thee alone!

The king with his lament caused even the trees to shed their resinous tears. His spouse was torn from his embrace and committed to the pyre made of agallochum and sandal. Having performed after ten days the obsequies of her of whom nothing was left except her virtues, he entered the city without her, fading as the face of the moon when night departs. The goad of sorrow tore his heart as tears the temple's court the fig tree's branch. Having instructed his son Das'aratha in the duties of empire he determined to deliver himself by starvation from the habitation of his body, afflicted with disease, on the confluence of the Ganges and Sarayu, where he was numbered among the immortals having rejoined his loved spouse fairer than in life.

On the death of his father, Das'aratha, the conqueror of his senses by meditation, borne in his mighty car, assumed the reins of government. From his rewarding labour at a suitable time, he received from the wise the title of the destroyer of fatigue. In his land disease fixed not its foot, it afforded richest fruits, bright as the immortals. In his equity, in raining down riches, and restraining the wicked he

* It is a custom among the Hindus to plant the five trees Asvat, Bat, Jayanti, Asoká, Svami in a circle, and to make offerings to them, as they consider that as long as these trees remain so long the offerer will remain in heaven. There is now a law suit pending in one of our courts in consequence of one of these trees having been mutilated.

rivalled Káma, Kuvera and Varuṇa, and the sun in splendour.* Neither the delight of hunting, or gambling, or wine sweet as the lunar rays, withdrew him from business. Towards transgressors his heart was of iron. He conquered the ocean, whose waves like drums resound in lofty sounds the tidings of his victories. Hundreds of captive monarchs in their prostration illuminated his feet with the diamond rays that flashed from their diadems which dispersed them as rapidly as "Sol the water by his rays." His horses refreshed themselves on the banks of the Sindhu; the people of Kamboj were as little able to stand his charge in battle as the *Akshodh* tree to resist the elephant's mighty force. The descendant of Raghu ascended the summits of Gauri's parent (Himálaya) which seemed loftier from the clouds of dust raised by the march of his troops; the winds whispering through the reeds wafted drops of Ganges water: the herbage at night by its brilliancy served the soldiers instead of lamps. In his battle with the mountain tribes, fire flashed from the concussion of spears and arrow heads. At the close of the sacrifice he soothed the *Khetriyas*, grieved at the great slaughter, by giving them high honours and allowed them to return to their wives languishing after long absence, the *Khetriyas* having prostrated themselves at the feet of the king, not to be touched, but as an act of grace, proceeded to their homes.

But Das'aratha amid all prosperity did not enjoy that light called a son, which destroys the darkness of sorrow; in expectation long he dwelt like ocean before its churning, the production of gems not having yet taken place; as travellers tired with heat seek the shelter of a shady tree, so resorted the gods, vexed by Rávana, to Vishṇu, who sat with eyes like the opening lotus, with garb dyed in the rays of the rising sun, like an autumnal morning soothing to the eye. With eyes brilliant after the slumber of religious abstraction had been over, Bhṛigu and the other Rishis in songs of praise addressed the conqueror of the Asurs:—"Hail in the threefold form of creation, preservation, and destruction. As celestial water which has only one taste

* It is singular how a radiant light has been associated by the writers of antiquity with the bodies of illustrious men, here with Das'aratha. The Arabic writers connected a brilliant light with Muhammad.

Scripture states that the bodies of the righteous shall shine in heaven like the sun.

assumes others in different localities, so thou, unchanged in different qualities, takest different states. Immeasurable yet measuring the world, free from desire yet imparting it, unconquered yet conqueror, unmanifested yet the source of all external manifestation. Of one form yet vested with various, like the variation of crystal owing to superadded colour : dwelling in the heart yet not near, old yet not growing old : omniscient, yet not known, the home of all things yet self-existent : ruler of all, subject to no ruler : one, yet of multiplied forms : praised in seven hymns, sleeping on the waters of the seven oceans, whose mouths of fire shining with seven fires are the refuge of the seven worlds. The ways that lead to bliss though in books diverse yet in thee converge as Ganges' streams in the ocean's waves. As gems are more valuable than the ocean, as its effulgence is brighter than the sun, so are thy deeds far superior to praise."

The gods declared the danger impending from a Rákhasa as from ocean threatening in a deluge to inundate its shores. To this Vishṇu, whose voice drowns the roar of ocean proceeding from the caves of the mountains adjacent to the shore, replied—I know the three worlds are oppressed by this Rákhasa, but through the favour conferred on him by his Creator his violence is tolerated by me as is that of the sandal-wood by the snake, but I shall become incarnate as the son of Das'aratha, and shall cut off his head like lotus tops in the field of battle—wherefore let the holy souls who in the fields of air beholding his chariot, wished to hide themselves in clouds, now cease their fear. On these nectarious words, the fruits of the gods, withered by the dryness of Rávana, became moist ; the gods followed Vishṇu as the trees the wind along the flowers.

For the attainment of his wishes Das'aratha the ruler of men performed once a sacrifice ; from its fire proceeded an awful form which spoke these words :—

"At the due time a son, dispersing darkness as the herbs the gloom of night and the mountain darkness, will be born." The father seeing his fair body gave him the name of Ráma, a sign, that by the light of his fame he will illuminate Raghu's family, by his splendour the lights in the lying-in chamber were paled.

His mother became thin, as the Ganges stream is feeble in autumn after its swelling torrents.

At this time also Bharata was born, the ornament of his mother as moderation is of prosperity. Sumitrá also gave birth to twins as the cultivated knowledge is the parent of wisdom and humility. On the birth of Ráma all the kings in terror of Rávaṇa breathed as through an atmosphere free from dust. The fire was darkened by no smoke and the sun shone in his splendour : flowers were rained from the heavenly tree : as the consecrated ghi swells the sacrificial flame, so was Ráma and Lakshman's natural modesty, increased by instruction, united in love, as the wind and fire, the ocean and the moon. Refreshing as are at the close of the hot season days dark with clouds, so cheered they the minds of their subjects, they soothed their father by their virtue as ocean with its gems consoles the Lord of the world.

At the request of Vishvamitra Ráma and Lakshmana were granted to him to remove the hinderances to performing the sacrifices ; as they moved on their way equipped with bows, the clouds rained flowers, the fatigues of the journey were relieved by words of ancient days, amid the songs of birds and fragrance from the dust of flowers. The Rákhasí *Tádaká*, of a colour black as midnight, having human skulls as earrings and dead men's clothes as a robe, quick as a wind from a cemetery, commenced an attack, having dead men's intestines wound round her legs ; but an arrow from Ráma soon despatched her to the dwelling of the lord of life. The prophet Vishvámitra gave to Ráma then a dart powerful by *mantras* to kill demons, as the diamond receives from the sun a lustre powerful to kindle wood. After this entering a forest whose trees joined their branches like hands together, the brothers protected the seer from danger, as the sun and moon the earth from darkness. Rákhasas disturbed the sacrifices, Ráma with his bow prostrated the son of Tádaka ; though heavy as a rock, he fell like a fading leaf ; Janaka, king of Mithilá on this invited them all to Mithilá. On the way the sin-destroying dust of Ráma restored the wife of Gautama. Janaka was surprised that the beardless Ráma designed to draw his bow, yet he believed him possessed of power as the flame, though little as the firefly, gives the power of ignition. The hands of attendants like masses of clouds brought the splendid bow, which though hard as a rock was bent by Ráma as easily as Kána Deva bends his bow of flowers ; to him as a reward for his strength Janaka delivered his daughter.

Das'aratha leading troops whose dust snatched away the solar rays, beset the city in friendly bands, the marriage of men and women took place like the union of a crude noun with its suffixes. Das'aratha returned on the march, the winds blowing against his soldiers, tree-like banners disturbed them as a river bursting its banks the plain, the sun was wrapped in a halo, the clouds of evening were red like garments dipped in blood, the wolves sent forth a horrid howl,—omens disregarded. Before them an awful form appeared wearing the *paita*, a sign of his father being a Bráhmaṇ, and bearing the bow, the sign of his mother being a *Khetriya*, the union of the two resembled that of sandal-wood with a snake. On his right ear he wore a necklace of *aksha* seeds. To Das'aratha the name of Ráma and Parasuráma suggested joy and terror as that of a necklace of gems and the serpent's gem. Parasuráma thus addressed Ráma, "as a sleeping serpent is roused by the blow of a stick so is my anger by your fame: the horn of my strength is broken by your bending Janaka's bow: the greatness of fire is tested by its burning in the ocean as in dry grass, therefore bend my bow." Him answered Ráma by bending the bow—on this the splendour of his face paled, as the sun at evening in the time of full moon, while Ráma brightened as the lunar orb, but Ráma pardoned him, for the brave respect merit even in a vanquished foe. Grateful as is the fall of rain to a tree on fire, so was the victory of Ráma to his father who received him as it were again to life. Then the lord of the earth having stopped some nights in serais, on the road entered Ayodhya, whose women from their windows gazed with lotus-eyes on the daughter of Janaka.

Das'aratha was near the period of his bodily extinction, like the light of a lamp at the morning dawn: old age in the guise of grey hairs whispered into his ears, Deliver your office to Ráma. The bare rumour of this rejoiced the citizens as much as a water course does the garden plants, but Kaikaleya according to promise required Ráma's exile for fourteen years: Ráma submitted, the colour of his face remained the same in his dress of bark as in his festal garb; with Sitá and Lakshmana he entered at the same time the *Dandaka* forest and the heart of every true man. Das'aratha went to heaven. Bhárata went to Ráma who had been married to the throne, who refused to return but by request gave to Bharata two slippers as tutelary guardians. Ráma lived on forest food, sometimes reclining under the tree's broad shade in the

two arms of Sitá : but Ráma soon left Chitrakote noted for its cuckoo songsters, and proceeded to the south, dwelling on the way in hermits' cells as the sun in the autumnal signs : his perfumed limbs emitted such an odour as to allure the bees from the flowers. As Ráhu obstructs the moon, so did a Rákhasa, brown as the cloud of evening ; he was soon killed and buried, to prevent his polluting the land with his stench. Ráma remained in *Panchavati* not passing the prescribed limits—a barrier like the Vindhya mount. As a snake tortured with heat draws near to a tree in the Malaya mountains, so did Rávana's sister Surpanaká tortured by love approach to Ráma, even in the presence of Sitá ; for woman's love when strong regards not time. Ráma of bull-like shoulders said, I have a wife, address my brother : she rejected by him again went to Ráma, like a river laving both banks. But the laughter of Sitá swelled her with rage as the rising moon excites ocean's waves lying unruffled by the wind. She said, Your laughter is like the contempt shown by a tigress to the stag : she who before spoke in sweet accents like the cuckoo's voice now sent forth the howl of a she-wolf, and suspended in the air, with fingers armed with crooked nails and thick as a knotty reed, she menaced the brothers with her army of Rákhasas, but from the showers of Ráma's arrows the trunks of the whole slept to rise no more in the shade of vultures. Surpanaka alone escaped to tell the tale to Rávana, who thought the feet of Ráma would soon be on his ten heads ; in the form of a stag he snatched away Sitá. Ráma formed a friendship with the monkey Sugriva for the rescue of Sitá.

In the city of Lanká surrounded by Rákhasas, Hanuman discovered Sitá resembling the sensitive plant surrounded by poisonous herbs. Ráma through love of his wife thought that crossing the ocean to Lanká was only passing a narrow trench. An army of monkeys accompanied him along earth's back, and through the paths of air over the salt waves he threw a bund and besieged the city Lanká, his apes making as it were a second golden wall ; Ráma mounted a chariot, the banner of which was moved by the waters of the celestial Ganges, he grasped the lance of Indra which repelled darts as easily as lotus leaves : the arrow of Ráma piercing Rávana's breast entered the earth as if to bring news pleasing to the snakes ; as a mound between two infuriated enemies so hung the power of victory poised between both. The gods and Asuras

showered on both flowers. A club of *Kutasalmal* furnished with iron nails was hurled at Ráma, but with semi-lunar arrows he cut off this club as quickly as a plantain bud. And at the same time the hope of the Rákhasas, the hundred heads of Rávana were cut off at one blow, presenting the appearance of the sun's image reflected one hundred ways by the flickering waves, a shower of flowers followed by a swarm of bees was poured on the head of Ráma by the gods. Ráma returned to his city.

Vishṇu taking the name of Ráma passed through his region (the air) the quality of which is sound, and thus addressed his wife:—"Behold the foaming waters divided by my bridge as the æther (the road of light) in autumn time exhibits the brilliant stars,—ocean is the parent of the solar rays the ministers of fire: like Vishṇu its form can be limited neither by number or quantity—in the ocean, are animals which spout torrents of water on high, snakes which rise to inhale the air blowing from the shore and shine with their diamonds reflecting the solar rays—as a brazen line on a chariot wheel, so appears dark with *Tamála* trees the narrow shore of the briny ocean black with ranges of *Tamála* and palm trees. The wind from the shore wafts the fragrance of the *Ketaka*. In our celestial car wafted we arrived at the ocean's shore planted with betelnuts bending under their load of fruit. Oh, thou stag-eyed, the cloud having the lightning as its bracelet becomes your ornament—the bark-clad hermits dwell in the Dandaka forest where the creeping plants by their shoots indicated your abduction,—there is the heaven-touching summit of the Malayan mountain where in your absence I could not endure the scent of the *Kadamba* flowers with half-opened leaves, nor the pleasing screams of the peacocks or the noise of the clouds reaching from their caves, then was I vexed by the beauty of your eyes dark with the smoke of matrimonial flames, then I beheld the ruddy geese inseparable in affection giving to each other the lotus leaves, the tender plants of Asoka with flowers pendant as breasts were embraced by me in your absence. Then near the banks of the Godávari I returned tired from hunting, refreshed by the wind blowing from the waters, reclining my head on thy bosom I slept in the reedy forests; there is the river Mandákina, with crystal streams which seen at a great distance seems at the foot of the mountain like a string of pearls on the neck of the earth—in this forest are trees which produce fruit without the previous mark of flowers."

After this Ráma alighted from his car on a ladder of crystal. As the moon, the queen of stars mounts the evening clouds distinguished for their gleaming lightning, so did the chief of Raghu's race climb his car marked with a standard floating in the wind. Bharata admired Sitá rescued by Ráma as the departure of the rainy season frees the brightness of the moon from the mass of clouds. Ráma proceeded to the forest near Audhe furnished with tents.

Das'aratha being dead, and Ráma in the woods, their wives lamented, sad as two creeping plants on the tree they clung to being cut, the cold tears of joy were mixed with warm sobs like the streams flowing from the snowy mountains united with the warm current of the Ganges and Sarayu. In water brought in golden vessels the senior counselors finished the inauguration of Ráma which was begun in woman's tears, water was fetched from rivers and lakes which fell on Ráma's head as cloud water on the Vindhya mountains, he entered the city of lofty gates amid showers of moistened grain. Like locks of human hair arose the wavy lines of the smoke of incense burnt in the houses. Sitá shining bright as fire sat beside Ráma who entered the house of his father who survived only in his picture. The past sufferings in the forest afforded in the houses ornamented with pictures only pleasure on the recollection. Sitá with her soft look, and face pale as the *shar* tree, without words, indicated to her lord her pregnancy the source of joy. Ráma at this time mounting his roof which reached the clouds, beheld his city and the citizens delighting in the royal parks. But on hearing from his confidants that his citizens doubted the purity of Sitá, his heart became lacerated as iron struck by an iron club, his mind wavered to and fro,—but glory being preferable to life he preferred repudiating his wife. He stated to his brothers called together, See, said he, the stain cast on me as on a mirror from a cloudy wind, though knowing her to be innocent, yet I feel the slur; men attach a stain to her as they consider the earth's shadow a spot on the moon. His brother conducted Sitá to the forests, little knowing that her husband had been changed from the celestial tree into a tree whose leaves had been paved with swords. When Sitá alighted, her brother-in-law declared Ráma's message weighty as a mighty cloud raining stones. Like a plant smitten with terror as by a wind to the ground, she sighed like a lamb with open mouth—in sympathising sorrow the peacocks ceased

to dance, the trees cast their flowers, and the goats rejected the cropped grass. The hermit who had gone forth to collect sacred grass and flowers beheld her as a bird stricken by the hunter. Válmiki conducted her in the evening to his hermitage where deer reclined and delivered her to holy women—they gave her at the end of the day a tent lightened with a lamp of ingud oil, a sacred skin serving her as a couch. Ráma on hearing of his wife, poured forth tears as the moon does snow in the month of Paus.

The lord of the ocean-encircled land hearing that the Rákhasa Lavana attacked the seers living along the Jumna sent his brother to subdue them. He proceeded through forests laden with flowers breathing sweet odours: the army co-operated with him as in the verb *adhyáyan* the preposition *adhi*. Lakshmana spent a night in the forest shades with Válmiki where Sitá gave birth to twins. The next day appeared Lavana black as smoke, with hairs red as flame, moving among his troops as the blaze of a funeral pile, he wrenched a lofty tree as easily as grass and hurled it at Lakshmana, but it was severed in two by his arrows, while an arrow pierced the giant, he fell, bringing terror to the earth and removing the terror of the hermits; flocks of birds pounced on the dead Rákhasa and showers of flowers fell from heaven on Lakshmana's head which was erect in its strength but low in modesty. After this Lakshmana founded the city Mathurá, from the roofs of which he beheld the Jumna flow by, adorned by the *Chakravákas*, wreathed as hairs of the earth with a golden fillet. Ráma's sons sang the deeds of their father which soothed their mother, the deer listening to the song. A sacrifice was appointed, Kusa and Lava singing the Rámáyana of Válmiki, Ráma and the assembly listened with rapture like a forest district unruffled by the wind, dripping with the dews of morn. Next day Sitá with her two sons came from the hermitage of Válmiki. With gentle mien, clad in red, fixing her eyes on her feet, Sitá came forward and was acquitted, the spectators stood with downcast head bending as stalks of rice laden with fruit. Sitá drinking pure water exclaimed, I am free from this sin and appeal to thee, O earth, to receive me to thyself; so saying a light burnt from a chasm in the ground, the goddess earth appeared and with her she descended to the lower regions. Ráma tried in vain to recover her, but the love he had for Sitá, he now reposed in the sons. Yam

appeared, directing Ráma to enter heaven ; Lakhsmana at this time died on Sarayu's banks, Ráma finding that one-fourth part of him had thus gone to heaven, stood tottering like virtue standing on three feet. At the time of his ascent all *Audhe*, except the houses, proceeded out to see it, his footsteps were bedewed with the tears of the citizens big as the flowers of the Kadamba, regretted by the rayats to whom his kindness had long been great. Kusa, Ráma's son, succeeded him, the other brothers kept within their respective spheres as the ocean within its shores. As Kusá lay one night awake in his bed chamber, the lamp burning with still flame, he beheld a woman with the shape of a shadow on a mirror, having a countenance of woe.

She announced herself as the tutelary goddess of the city deserted by its ruler of the solar race, in consequence of which the portals fell to ruin like the end of day when the sun sets behind the western hills, and the clouds are scattered by the wind—in the royal paths where wandered once the wanton girls of shining feet, the dogs now hunt for food ; the water which once in the tanks struck by the hands of females gave forth the sound of the lute, now sends out the bellowing of wild oxen ; on the steps once trod by the yellow feet of fair women, the tigresses now place their blood-stained track on the statues of females now faded and covered with dust.

The tiles were so stained from time and covered with seeds as to give no reflection of the moon's rays though bright as gems : wild monkeys pluck the plants formerly cropped by playful girls. The windows exhibiting no splendour of the midnight moon and bereft of the light of woman's face are covered with spiders' webs, while the reed-made huts on the Sarayu's banks are deserted. The king agreed to return to *Audhe*, a suitable day was chosen, and the soldiers followed him as clouds do the direction of the wind. The army on its march resembled a royal city, the crowds of banners a forest, the elephants mountains, and the chariots palaces, the army shone as the ocean under the reflection of the moon beams moving to shore. The earth unable to bear the weight of the troops mounted in clouds of dust into the æther, the army moved across the *Vindhya* hills ; the chariot wheels were red from the metals' friction, he passed the Ganges on a bridge made of elephants fastened together. The swans in their aerial circles served the purposes of a goad. Crowds of builders renewed the

face of the city, as the clouds the earth when parched by summer's heat. Summer came prompting the maidens to ornament themselves with jewelled garments and with vests which a breath could blow away. The days of summer heat increased and night was very short, both like husband and wife, who separating after a quarrel are burning in the flames of sorrow.

Kusa and his women entered tents erected on the banks of the Sarayu, the women amused themselves in sporting with the swans and dashing water high which washed off the paint from their limbs, exhibiting diverse colours like the dawn covered with clouds, but their joy of heart restored a colour to their eyes similar to that of the pigment washed away by the water, which by its concussion gave the sound of a drum; on hearing which the sweetly singing peacocks expanded their tails, the Rájá sported with them in the water as a wild elephant does amid the lotus flowers, in contact with the king; the women shone more brilliantly, like ordinary gems with an emerald. But while bathing the Rájá lost the bracelet, the pledge of victory given to him by his father Ráma. The fishermen searched in vain and with countenances languid as the lotus gave to him the news, but to Kusa the hook of the enemies this was soon restored: amid the rain of flowers Kusa married Kumadvatí of the serpent race.

By Kumadvatí a son Atithi was born, fair as the moon towards the dawn of day. Kusa, his father, by having a son endowed with equal good qualities as himself multiplied himself. Preparations were made for the son's inauguration as King: the sweet and deep-toned clang of the musical instruments gave presage of the happiness of his reign, the lustral ceremonies were performed by the scattering *durvá* grass, barley stems, the bark of the fig and lotus calices—the Bráhmans moved in procession singing triumphal songs while water from the Ganges was poured on his head in streams. The King elated with the praises of the heralds seemed like a great cloud hailed by the *chátaka* birds; as the splendour of fire sprinkled by rain is increased, so was the Rájá's by the sacred water. As a mark of joy he ordered prisoners to be free, oxen to be taken from the yoke, cows not to be milked, and the parrots shut up in cages to be released. The King seated on an ivory throne, had his hair decorated with a row of gems, his body was coloured with the yellow pigment *rochana* and his members

made fragrant by the sandal-wood, he wore a robe of silk on which was wrought the figure of swans, his dress shone in a golden mirror as the shadow of the celestial tree at sun-rise on the top of Meru's mount. His course from youth to the throne was like the moon when she attains her full-orbed greatness.

Except after smoke the brightness of fire is not seen, but he shone out at once with all his virtues ; the women accompanied him with their eyes shining through joy, as the polar star in a bright antumual night. Atithi himself administered justice daily, giving to the citizens the ripe fruit of the testimony furnished, he only violated his promises in favour of his enemies, though a youth he was firm as a deep-rooted tree. He sent out spies as rays which made all know as clear as the sun in a cloudless sky—he slept at his own suitable time but watched by emissaries—his successful aims well planned ripened secretly like grains of rice lying hid in the stalk—even at the height of prosperity he never swerved from the right way as the salt sea however swollen still enters into the mouths of rivers, he never attacked his inferiors, as the blazing forest flame though aided by the wind does not assault the water. He valued alike the honest, agreeable and useful. He accumulated wealth to give to others as the cloud filled with water supplies the *chátaka*. As the magnet draws the strength of iron, so did he the power of his enemies. The merchants travelled on the rivers, as on lakes ; in forests, as in gardens ; in mountains, as in their houses ; as an elephant by its smell alone drives away other elephants, so did he his enemies by the prestige of his name. Atithi did not decline like the moon or ocean. He held the applications of poor but honest men a benefit to himself as are the clouds to the ocean, like the rising sun he dispelled darkness by the sense of truth. Although the rays of the moon enter not the nelumbium, nor the rays of the sun the lotus, yet his virtues penetrated the enemy, by his good qualities he became King of kings.

A son was born, named Naishadha : the father, whose deeds in spotless purity equalled the Nymphæa, ascended to heaven ; the son of lotus eyes and mind profound as ocean's stream, governed the ocean-girdled earth after him ; his son Nalus of fire-like power trampled on his enemy as the elephant does reeds. His son Nabhasi's body was fair as the azure vault of heaven, in his old age he formed friendship with wild beasts.

A descendant of his Ahinagus was noted for sweet words able to carry captive the stags. Visbasah another descendant left the kingdom to his son and clad himself in a dress of bark ; Dhruvasandha, a successor, ruled like the polar star : with stag eyes and lion's heart like the new moon he delighted the eyes ; to him succeeded a youthful monarch, the kingdom resembled the sky when the moon has just risen or a forest inhabited by young lions, or a lake not yet having the expanded lotus. As a small emerald is still an emerald, so the King though only six years old was still a King ; before he had learned his letters, he was instructed by wise men in Ethics, with years his body and virtues received increase. He entered on the stage of youth, the flower on the tree of love growing on the stalk of continual delight, a wine to be observed by maiden's eyes, an ornament diffused over the whole body.

But after a time he appointed his son Agnivarna, shining as fire, to the throne where with holy water and sacred grass he forgot his former state—the son resigning his kingdom to his ministers delivered himself over to the enjoyment of women, buried day and night in the interior of his palace, exhibiting at times only his feet to the gaze of his subjects, which resembled a lotus tinged with the rays of the rising sun. In tanks amid sport with his women he spent the day quaffing with them large draughts of wine amid the sound of harps and maidens of fair eyes. In the houses the lamp at night unmoved by the wind became witnesses to his deeds. His passions enfeebled by success were stimulated by drinking mango juice and the flowers of the Bignonia. Decay began, he saw destruction before him from his excesses, yet regarded not his physician's advice, he became enfeebled by consumption, with ghastly look, of low voice, leaning on others, his family became like the moon in its last quarter or a summer lake with only mud banks left, or a lamp with languishing flame—no son was born, though attached to so many women ; the diseases baffled the skill of the physicians as the wind a lamp. Soon in a grove near his house the ministers performed his last funeral rites, while his wife pregnant was invested with the royal dignity. His child on birth was warmed with tears shed at so melancholy an end of the father and was then refreshed with cold water drawn from golden vessels to inaugurate his line.

On Filtering the Waters of Tanks in large quantities, for the use of Towns.—By HENRY PIDDINGTON. *Curator Museum of Economic Geology.*

About four or five years ago I had occasion in reply to some queries addressed to me from Oudeypore by Mr. Brandreth, C. S., to consider this subject a little. I have kept no copy of my letter to that gentleman, but the matter has again been brought to my mind by the observations of Dr. Chuckerbutty lately published, and as the question is one of great sanitary importance, a record of any proposal for accomplishing this, cheaply, effectively, and abundantly, may be worth preserving. Every project of the kind will necessarily be subject to modifications in practice, though the principles may be found always to hold good, and the means to be perhaps more efficacious and cheaper than is commonly supposed.

There are two objects in filtering water, which are :

1. To obtain clear water, or mechanical filtering.
2. To obtain clear *and pure* water, or chemical filtering.

And these should be kept in mind as being distinct ; though as I shall subsequently shew, they may perhaps be combined and accomplished at one operation. We will first consider that we have the common river or tank water of Calcutta to deal with, and wish only to make clear—that is wholesome-looking—water of it.

The processes of nature in filtering her waters are—upwards or downwards, or diagonally, or horizontally, as between the close layers of stratified rocks ; and she uses an infinity of various materials and mixtures of these materials for her filters, some of which act simply to clear the water, and others to purify it. Many of these of both kinds either natural or artificially compounded are within our reach, and I set down here such as occur to me.

CLEARING MATERIALS,

or Mechanical filters.

1. Common sandy earths.
2. Sands, coarse and fine.

PURIFIERS,

or Chemical filters.

1. Coarse kunkur gravel of the limestone kunkurs, which is

- | | |
|-----------------------------------|--------------------------------------|
| 3. The slates of all kinds. | limestone or pisolite. |
| 4. Porous sand-stones. | 2. Coarse kunkur gravel of the |
| 5. Jumma or glass of brick kilns. | <i>ironstone</i> kunkurs or pisiform |
| 6. Small shells and shelly sand. | iron ore. |
| 7. Koah or pounded brick. | 3. Ironstones and iron earths of |
| | all kinds from Basalt and |
| | earthy iron ores to the late- |
| | rites of Midnapore and Cut- |
| | tack, and the yellow ferrugi- |
| | nous earths. |
| | 4. Chalk and massive kunkur. |
| | 5. Limestones, as that from Syl- |
| | het. |
| | 6. Black hornblende sand from |
| | Saugor Island, or other parts. |
| | 7. White clays of various kinds. |
| | 8. Soorkey. |
| | 9. Charcoal and coke. |
| | 10. Bone charcoal. |

We desire to obtain first pure *looking* water, not forgetting that water may appear to be pure and yet hold unwholesome matters in solution. Filtering at one operation, both upwards and downwards is perfectly easy, and will in most cases give clear water at once. This is managed as follows :—See Plate.

A. is a wall enclosing any space with openings of any kind *at the top only*.

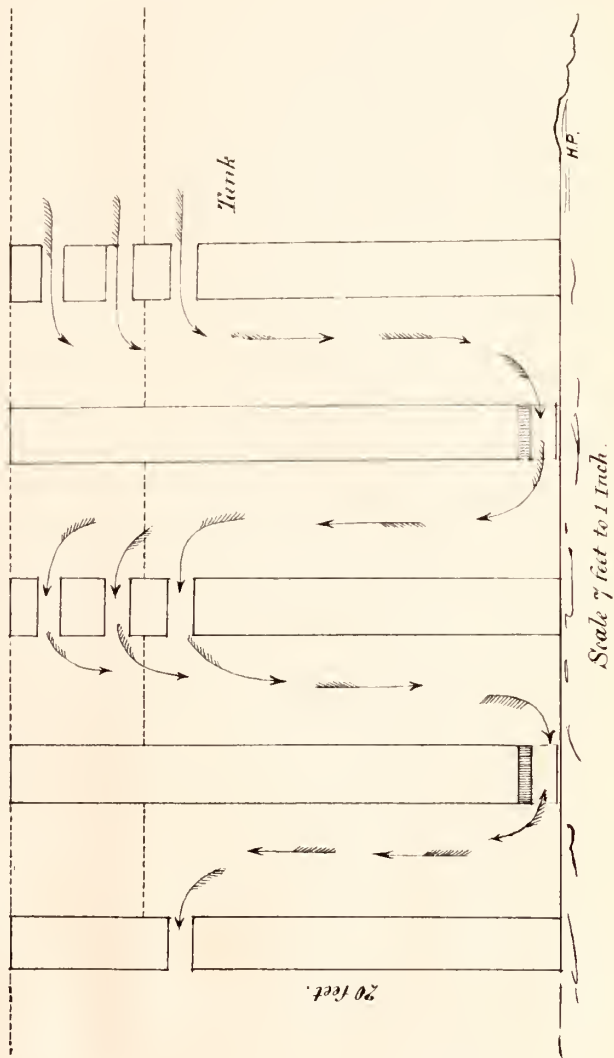
B. a second wall with small arched openings *b* below.

C. is a third wall with openings only at the top again discharging into the reservoir D. for the clean water.

Now if the spaces between A. and B. and B. and C. be filled with any good filtering materials from the first list, as fine washed sea sand from Saugor or the coarse *Muggra bally* used by our masons, the water which enters through A. (being the surface water which is always the clearest)* will filter through it downwards beneath B. and

* Some of the holes at A. &c. are always supposed to be below the level of the Tank, when at its lowest level in the dry season.

Section of Filtering Walls.
 Tank 20 feet and drying to 15 feet deep



upwards to C. If these spaces be ten feet deep only, this gives twenty feet of filtering distance, in every inch of which the water will leave some of its impurities. A small wall and sluice outside of A. would cut off the communication and enable us to clear out our filtering apparatus and re-fill it with fresh materials. It is probable that no water would require more filtering than this to come perfectly limpid into the reservoir, but if any did so, another pair of walls might be added. They may be tolerably close; say just far enough apart to allow a man to work in clearing out the material when it requires changing, for it is to be noted that the efficiency of this filter depends upon its *depth*, and not on its breadth at all.

It is evident that walls may be built to any extent required, either merely to inclose a ghat, or a corner of a tank, or across a whole side of it; and that arrangements may easily be made for preventing the fouling of the limpid water, when filtered, by those who take it for use. A modification of this which might be adopted in private tanks or even in public ones, would be to have sheet iron caissons made, one within the other, and placed in a tank, so that the central space should always be a well of limpid water.

But as above remarked, *clear* water is not always *pure* water, and that of the river for instance, though filtered till perfectly pellucid, would no doubt still contain animal, vegetable and saline matters which being held in solution must be separated by some natural chemical process, and this may be called chemical filtering. We do not know what the impurities of our water are, but we will set them down generally as animal or vegetable matters and saline ingredients, such as phosphates, carbonates, sulphates and muriates of various bases.

We have then first to determine by varied experiments which of the cheap and easily obtained substances in our second column is likely best to answer our purpose, and there is no doubt but that some of them simply, as the iron stones in various forms; or mixtures of them, as chalk with kunkur gravel, or chalk with the coarsely pulverised basalts; or with the black sand and the like, will decompose the saline matters, and at the same time, frequently cause also the separation of the animal or vegetable matter, or of the greatest part of it. A familiar instance of the use of iron earths is well known to chemists in the use of the water of the Seine at Paris, which is what is called

in the country in England a *hard* water, i. e. it holds a considerable proportion of sulphate of lime in solution ; curdling soap even after it has been boiled, and is even said to affect the bowels of persons unaccustomed to use it. To correct this defect, the French use in their cisterns and filters what are called *Boules de Mars* which are merely an earthy red oxide of iron, and these decompose the sulphate of lime and render the water much better for domestic use. The white clays to be found in many places in India, and which all contain alumina, and some of them sulphate of lime (gypsum) will also frequently be found useful as chemical filters.

It is evident from what has been said above, that the mere clearing materials which serve to render the water limpid, and those which act chemically may be combined either in mixtures or in layers as thus. In ten feet of filter there might be five beds of coarse sand, and five of iron kunkur or chalk, or those materials may be kept separate in the two divisions of the filter, and thus that, by varying the filtering media, we may with great probability assert that we might obtain nearly pure water at a very small expense, whenever the Government or the Municipality, or any individual who can afford it, will undertake the cost of the experiments on a proper scale. If a long narrow canal was led from a tank to any convenient situation for a reservoir and different divisions, say at every ten or fifteen feet, were filled with different kinds of filtering materials, this would be the same process in a horizontal direction ; but not, I think, so efficacious as that which I have proposed, upwards and downwards.

H. PIDDINGTON.

May 1st, 1852.

Diary of a Journey through Sikim to the Frontiers of Thibet.—By
Dr. A. CAMPBELL, Superintendent of Darjeeling—with a Map.
(Communicated by SIR JAMES COLVILLE, Kt.)

(Continued from page 428.)

Chateng, October 7th.

Elevation 8,500 feet, started from Latong at 7 A. M. and did not reach our ground till 6 P. M. A mile from camp we crossed to the left bank of the Lachen by a rickety cane-bridge: the river a continuous sheet of foam; which is the character of it, and of the Teesta all the way from the junction of the Rumam; below that the water is heaved up in waves. The declension of the river's bed must be very uniform in each division of it, viz. in the way and in the foamy parts. The rate is very rapid; Dr. Hooker estimated it at 11 knots an hour. Close to the bridge there is a fine cascade of 100 feet or more from an affluent of which I could not learn the name. At $\frac{1}{2}$ past one we reached the "Takchoong" feeder which is a deep and furious one, and found the bridge at the proper crossing place had been swept away. Having ascended some way we found a crossing in progress of being formed. The operation presented a very animating scene. About 30 Lepchas having laid long Alder saplings from rock to rock in the torrents course, spread themselves across the roaring torrent, and by binding 3 or 4 of the saplings together for foot ways and running temporary rails, we all passed, the foam beating against the foot ways and wetting us all over. Keeping along the left bank for three hours we re-crossed to the right bank of the Lachen, and ascending a short distance came upon pines near the river's edge; all the way from Chongtam the mountain tops are clothed with them.* Our route now lay through an open forest of lofty Pines. At about 500 feet above the river and 2000 feet below the crests of the mountains, we crossed a recent landslide of great extent, and further on we crossed a roaring torrent running over a solid rocky bottom which terminated in a precipice 20 yards below the crossing, the water shooting in a cascade down to the river with a fall of 400 feet; one of our coolies slipped his footing at the crossing, and was saved from being instantly shot over with the torrent by a man who promptly seized him. From this crossing we

* *Pinus Brunoniana*, and *Pinus Khutrow*.

made a very steep ascent of 500 feet through a thick forest of Pines, at the top of which we suddenly issued on a wide and steep expanse of grass thickly studded with Anemones, asters, beautiful purple Primroses, and a profusion of blue and yellow flowers which all combined exhibited the gayest sheet of vegetation I had ever seen. For the first time I now realised the pleasure I had so often derived from reading accounts of the beauties of this sort to be met with, in the upper and inner regions of the Himalaya to the westward; and which are quite distinct from those which characterise the lower and outward ranges in both quarters of the chain.

The ascent continued through this loveliness to the top, and then Chateng itself, which is a broad spur from the Takcham mountain, spread out before us in undulating terraces for more than a mile square. Clumps of Pines adorned it like a noble park, and overtopping it to the north-west the snow-clad summits of Takcham shot into the sky to the height of 17,000 feet.

The views from Chateng are as fine as itself is beautiful. To the south and east a long reach of the Lachen river foams along with numerous cascades dashing into it from either side. From the west a torrent and waterfall come pouring down for 2,000 feet through an avenue of noble Pines; and to the north is the valley of the Lachen apparently terminated by a snow-topped mountain 12,000 feet high, which divides the valley of the Lachen proper from that of its western feeder the Zemu. Chateng would be an incomparable place for a residence in the rainy season if it was even tolerably accessible from the south, which it is not at present. The climate is much drier than that of Darjeeling. Hooker found the fall of rain and humidity of the atmosphere much less in the country above Choongtam, than in the lower part of Sikkim.

Yeunga, October 8th.

Started at 8 A. M.: descended from the lovely Chateng to a torrent flowing into the Lachen from the west which we crossed; ascended thence toward the village of Lachen through a forest of noble Pines, and along a good road, the under jungle of the forest becoming more and more scanty as we advanced, the soil dry and sandy. Suddenly round the end of a beautifully wooded spur we came in full view of the village of Lachen, also called Lanteng, an exceedingly pretty

place and picturesquely situated on a gently sloping terrace covered with grass, and having handsome clumps of Pines scattered over it. A streamlet of clear water runs over a pebbly bottom meandering through the village.* Lamteng consists of about 30 houses built of wood and raised on posts four feet from the ground, with lath and plaster walls neatly white-washed, or of a light blue colour. The roofs are shingled, with rows of stones to keep them down, and the lower story is generally walled in with stone, and used for goats, sheep and cattle. The only cultivation was some turnips near the houses, and a little buck-wheat higher up the hill. The inhabitants are all Bhotias, and are at present engaged in tending their flocks of yaks and cows higher up the valley. There was not a man, woman, or child left to look after the houses. The doors were locked and sealed, the latter a Thibetan custom. Lachen is the situation of a Phipun and of a Lapun, two officers who manage the joint interests of the Sikim and Thibet governments among the nomadic population of this valley. The Lachen Bhotias graze their flocks over a great extent of country in Thibet and Sikim, penetrating as far as Kambajong in Thibet to the north, and descending to Denga† in Sikim on the south. The valley of the Lachen forming the cis-Himalyan portion of their beat extends as far as Kongra Lama where the Sikim territory terminates; thence they go over the Thibetan wilds towards Geeree and Kambajong wherever grass is procurable. These nomadic people, occupying as they do both sides of this border, are equally subject to Thibet as to Sikim. During the time they are in Thibet, or about half the year, they pay for cattle grazing there, and the same while within the Sikim border. Their payments are in curds, ghee and kine to Sikim; to Thibet they pay in shingles, bamboos, dye stuffs, and also in dairy produce. The Thibetan influence is upon the whole much greater in the Lachen valley than that of Sikim, although the territorial limits are to the north of it, and not disputed now. The origin and continuance of this state of things between two contiguous states are curious enough. It appears that a very long time ago a Phipun of Lachen—in the service of Sikim—became indebted to the Lama of

* Elevation of Lachen 9000 feet. The Pine clad mountain forming its back ground is 1500 feet more.

† Denga is three miles above Choongtam.

Digarchi for a sum of money which he was unable to pay. The debt of the capital sum was expunged: but the interest, secured by a bond, was made payable to the Lama and his successors, with a proviso that the obligation should be transferred to the Phipun's official successors, all of whom on taking the office receive this bond from their predecessors and discharge its conditions. The interest is paid in shingles for roofing, a specified number of which are to be prepared annually in the Lachen valley and forwarded to Digarchi. The La Pun, or Deputy Phipun, is appointed by the Thibetan officers at Kambajong. The Phipun holds his appointment from the Sikim Raja. The Thibetan influence is further secured by the fact of all the holders of stock in Lachen being indebted for advances of money or goods to persons in Digarchi. The usual rate of interest paid on such advances is 25 to 40 per cent. per annum. I look for further particulars of the peculiarities of Lachen as we advance.

At noon we crossed the Zemu, a large affluent of the Lachen from the north-west by an excellent bridge, and ascended to our encamping ground. Elevation of Yeunga 10,000 feet. Thermometer fell during the night to 44°.

Tungu, October 9th.

Elevation 13,000 feet. Ther. at 4 P. M. 42°. Started from our last ground at 7 A. M., and reached this at 3 P. M.; road good all the way and the distance not above 12 miles. I rode the greater part of it, the Lachen Phipun having sent us down three good ponies from Tungu. Half a mile above Yeunga the Lachen valley opens out considerably; the stream runs in a quiet ripple, with the banks shelving to its edge, and there is a good deal of level ground on both sides. The mountains however are as precipitous on either side as they are lower down, but do not, as there, form the immediate banks of the river. At Pangri which we reached in an hour from Yeunga, the valley again narrows, and the river becomes rapid and foaming. This alternation of meanderings and rapid courses obtains all the way to "Tungu;" yet in no place is there any cataract, or even a sudden fall. At 10 o'clock we crossed the Lachen—to its left bank—at Talom Samdong by an excellent bridge. Here there is a flat terrace half a mile long and 20 feet above the river, with 20 houses belonging to the Lachen Bhotials, who occupy them in their migrations up and down the valley. These

houses are built of stone without any mud or mortar, are of one story roofed with shingles, and of one apartment only : some of them are plaistered with mud, and all have a wooden door and shutter windows, which were tied up and *sealed*, as at Lamteng, the people being absent with the cattle, and not a soul left behind to watch the houses.

From Talom Samdong up the valley and bearing north-west, we had a fine view of the Chomiomo mountain : it is a magnificent mass of pure snow, the crest of a hog-backed shape with three sharp-pointed spikes, or small peaks rising out of it, and to the east up a deep gorge like valley the snowed peaks of "Milah" or "Minglah" came in sight. These peaks Hooker tells me are also seen from the Lachoong valley, and are to the south of "Momay Samdong."

The vegetation during this march has undergone a great change. Near the last camp we had fine pines, larches, tree junipers, large birch and willow trees, the large red and white rose, and many of Hooker's new species of trees, rhododendrons, mixed with 3 or 4 kinds of red fruited barberries—the barberry at Darjeeling is a damson blue—a very handsome thistle and gigantic hemlock extending to the river edge. The Tendook poison plant, *Aconitum palmatum* or *ferox*, is very common along this march.

After passing "Yatung" four miles below Tungu the trees become somewhat stunted, and here we came upon quantities of red currants—the first I have seen in Sikim—the Faloo and Tsuloo, dwarf rhododendron, mountain ashes, and dwarfed willows. The red currant—called kewdemah—is a beautiful large smooth-skinned berry in large bunches ; but bitter as well as very acid. The Faloo and Tsuloo rhododendrons are strongly and sickly scented plants, which cover large spaces of the mountain sides in this direction. The other species of rhododendrons are extensively diffused, covering whole mountain sides in many places principally in east and west exposures. The south wind in this valley at its upper part especially is strong and constant during the day. At night a piercing wind set down the valley from the north. The autumnal tints of the foliage are now becoming well marked, and the dark green of the junipers and webbiana pines contrasts vividly with the lighter green of some of the rhododendrons, and the yellow and scarlet tints of maples and barberries. No cultivation at Tungu. Herds of yaks are browsing on the steep grassy

declivities around it, while ponies with brood mares, and a few cows graze on the flatter ground of our encampment. The village consists of 20 wretched stone hovels with low pitched shingle roofs, over which a covering of pine bark is laid, the whole being held down by rows of stones two feet apart. The shingles and battens are made of the wood of the various kinds of pines, and are prepared all along the valley above Lachen—or Lamteng—for home use, and for export to the Thibetan stations of Geeree, Kambajong and the city of Digarchi. The favourite size for shingles is 4 feet by 1. The interior of the houses corresponds in wretchedness with their exterior. The people sleep all huddled together on planks laid on the ground, and have no furniture of any sort: the fire is lighted on the floor, with upright stones placed in triangles for the earthen cooking pots, and for the large earthen tea pot which is always on the hob. Dirt, smoke, tattered garments which are never changed, and faces which are never washed, are the invariable characteristics of the Lachen Bhotias. Men and women dress alike in loose woollen wrappers with very long sleeves, woollen caps and boots. The men carry a small brass tobacco pipe in the girdle which they are constantly smoking, and rarely carry arms of any kind. They are very dark in complexion, but it is more the darkness of colliers than of the tint of the skin, and is probably the result of sitting over smouldering sheep-dung fires, and of engrained dirt; for some of the children are almost rosy.

Tungu, October 10th.

Halt here to-day as the morning was cloudy with drizzling rain, and our intended visit to Phaloong and Kauchanjhow would have been useless in such weather. Having seen these places we purpose moving on to the Pass of Kangra Lama, which is about 12 miles up the valley, and at the head of it.

We have had some very good and clean made yak milk butter from the village, and we have replenished our larder by slaughtering a young yak, the condition of which is very promising.

The Bhotia who sent it came to beg for one of the feet with which to pacify the mother at milking time, and carried it away with him.

October 11th.

Drizzling rain all yesterday, last night and this morning; so that

we are weather-bound; our great object now is to see what we have so nearly reached. How I long to see that mountain Kanchanjhow from the plain of Phaloong, described to be such a glorious sight by Hooker! The character of the rain fall here is different from that farther south—at Darjeeling for instance. It is lighter and drizzling, accompanied by a thin grey mist, and this was equally the case in July when Hooker was here for 7 days.

There is no cultivation of any kind here at present, nor was there in July. The land about the village has the appearance of having been sometime ago terraced for cultivation, and wheat was grown here when the Thibetans held it. Turnips grow, I believe, but nothing else is tried by the present inhabitants, who are obstinately idle and lazy: a few beautiful purple primroses are still in flower in sheltered places, but the winter is setting in rapidly. Ther. at 11 A. M. 41° . During the night it fell to 39° . At noon 37° —heavier rain and sleet: at 4 P. M. 34° , and snow. Some of our servants have suddenly got dropsical swellings of the face and feet, which they attribute to the great cold. These swellings are not attended by any pain or fever, but merely with lassitude and want of appetite. What *will* become of these cold-stricken creatures if we get into Thibet? I have lost two goats since yesterday: the symptoms were those of poisoning, saliva running from the mouth and nostrils, swelling of the stomach and constant bleating. The Tendook aconite is abundant here, and the leaves of one of the rhododendrons are poisonous for cattle; it is named the “Kema Kechoong.”* The smoke of its wood is very pungent and swells the eyelids. The juniper wood makes by far the pleasantest fire; it burns clearly and quickly, with a fragrant odour and with very little smoke or ashes. This is important when you have the fire as we have it, on the middle of the floor of a small hut without any chimney. The openings in the shingle roof however are numerous and serve for smoke vents, as well as for leaks and light holes. The Doongshing, Webbiana pine is the wood most used for shingles, being the easiest worked, and lasts 3 to 4 years. The juniper shingles last longer; but the wood is harder, and these people avoid labour to the utmost extent possible, every thing beyond looking after

* Rhodo Cinnabarinun.—Hooker.

their yaks, and riding their ponies, being distasteful to them. The yak is a shorter lived animal than the cow of Sikim. After 7 or 8 calves the female is much aged ; the cow will give 10, or 12, and even 14 calves. The period of gestation in the yak is said to be 9 mouths exactly, of the cow 10 or 20 days more. The flesh of the yak is, I think, the best meat that can be put on table ; it is of delicate flavour, tender, juicy and eats quite short ; the gravy is totally free from greasiness, and the meat of stringiness, which cannot be said of beef or mutton.

October 12th.

Still detained by bad weather. It snowed till midnight, and is raining this morning. The snow has not lain at our camp : but the mountains all round us are snowed from the top to within 500 feet of us. Ther. rose during the night to 35° ; it was 34° at 4 p. m.

A string of 50 laden yaks has just arrived from Kambajong in Thibet with wool for the Phipun of this place. They came in two days. The average load is about 3 maunds, 240 lbs. The yak gear is very simple, a thick pack-saddle of blanketing, over which a saddle tree of a tough rhododendron wood is girthed with yak hair ropes, and secured by a crupper of the same material. The nose cartilage is pierced, and a hair rope in it is the only bridle. The ears are decorated with tufts of scarlet wool, which are very becoming. These pack animals are all geldings ; they were in fine condition, the long hair on the belly reaching to the ground ; the common colour of all we have seen is black all over, one in 15 or 20 is white-tailed and white-faced. Some are black and white mixed, and a few are dun. The yaks are kept in Thibet as bulls till 3 or 4 years old ; they are the only animals used there in the plough, and for loads. The plough in use about Digarchi is the same as the Bengali one. The materials for it go from this valley and Lachoong ; the oak and birch are the favourite woods. The people generally move downwards from this place in Noor, to Talom Samdong, then as the cold increases to Lachen (Lamteng), and downwards as far as Latong and Denga. The migration upwards is performed quite as gradually, beginning in April. All the rain and snow falling at Tungu come with southerly wind, scarcely any of either ever fall with north wind, which always indicates steady and clear weather in this part of the world.

October 13th.

6 A. M. light clouds coming up from the south; to the north it is all clear. Ther. 40°, surrounding mountains snowed to 700 feet above our camp. A portion of Chomiomo mountain in perpetual snow is visible: bearing north-west.

The Bhotias of the village are already assembled on the green, sitting in a circle round the headman, all busily talking, and all smoking their brass pipes, which every man carries at all times stuck in his girdle. This mode of assembling is a daily practice, generally in the morning and evening, but often at other times. It is an idle gathering very often; but at other times business matters are discussed and settled.

October 14th.

At 7 A. M. yesterday it suddenly cleared, and we started on ponies for Phaloong to get a view of Kanchanjhow, Chomiomo and the Choongoo Kang mountains of perpetual snow, which respectively lie to the north, north-west and east of Tungu, and the Lachen valley. Our route lay east by north, and along the right bank of the Tonguchoo, a stream which falls into the Lachen, below the village of Tungu. Ascending about 1,000 feet, we came to a dozen of black yak hair tents, in shape like those of the Israelites, occupied by as many families of the Lachen Bhootias tending their yaks; they had come down the previous day from Phaloong in consequence of the fall of snow, and told us that the Thibetans from Geeree and Kambajong, who had been with them at Phaloong since July, had from the same cause retired with all their yaks and sheep across the Kangra Lama Pass into Thibet. The Lachen men will gradually descend their own valley as the winter season advances to Deenga, grazing their cattle on the way at Tungu, Talom, Samdong, Lachen or Lamtong, Latong. The Thibetans have retired to Zeumchoo, and will do so to Geeree and Kambajong, where they rely principally on straw and hay for carrying their cattle through the winter.*

A mile beyond the black tents I got a glimpse of Kanchanjhow with a few light clouds scouring over its summit. I was leading our party; the bridle path was good and I pushed on in a high state of

* Geeree and Kambajong, although further in the interior of Thibet than Zeumtro, are at a lower elevation and warmer.

excitement for an hour, when I reached a turning that brought the mountain in full front of me, and here I had 20 minutes of great delight before any one came up, and before the envious clouds had greatly marred the prospect. I did not however get a full view at any one time of this noble mountain, which rises within 3 or 4 miles distance to 5 or 6,000 feet above where I stood at 15,000 feet; masses of fleeting clouds obscured large portions of its sides, and occasionally flew with the rapidity of lightning over its crest, leaving its sides and base only in full view, which was very tantalising.

It is a table-topped mountain, the outline of which describes a very flat arch; the dip to the west is sudden, to the east it is perpendicular, and the south face is equally so. The summit is an enormous bank of snow, at least a mile long, of the purest whiteness, and unbroken anywhere by protending rocks. The cliffs in front were sprinkled with newly fallen snow, and from their base to the foot of the mountain lay a mass of sloping snow of 2,000 feet or so in breadth.

Advancing further, we ascended gradually by a sloping spur to Phaloong, which is an open expanse of undulating ground, or a succession of downs extending for 3 miles or more in a North East direction to the base of Kanchanjhow, and of nearly equal breadth, being bounded on the east by the valley of the Ihachoo, and on the west, by a mountain range of easy slope and grassy surface, which divides Phaloong from the valley of the Lachen. The whole of Phaloong is quite bare of trees or shrubs, but affords excellent pasturage in grass sedges and numerous herbs. The mean elevation of the downs is 16,000 feet, the bounding range to the west being about 500 feet higher, with similar pasturage to its summit on the south-east exposure; and nothing but bare rock and loose stones on the north-western one.*

The ridge which divides Phaloong from the Lachen valley was thinly snowed over at noon. Phaloong was so at 8 A. M.; but it all disappeared by 10 o'clock under the rays of a very hot sun, which

* This is the character of the Lachen valley also all the way from Tongu to Kangra Lama, when a red-coloured rocky spur from Chomiomo comes down in an easterly direction, its flank facing you as you look to the north, and appearing to shut up the head of the valley completely.

warmed the atmosphere immediately it appeared, and gave a delightful feeling of elasticity to the air while it remained unclouded.

At 2 p. m. on the mean level of Phaloong where Hooker took Barometrical observations, and the boiling point of Thermometer, the Temp. was 45° ; the sky was cloudy, and a light snow drizzle falling.

Phaloong is about 7 miles from Tungu. About half way the Tungu stream is joined from the north by the Zhachoo, which rising from the western base of Kanchanjhow, sweeps round and bounds Phaloong to the east. For a distance of three miles the Zhachoo runs quite sluggishly and very tortuously through a flat swampy valley, which has all the appearance of a lake bed. After emerging from this swamp the stream is precipitated by a sudden fall over a collection of rocks and stones at the southern extremity, whence its course is rapid, and its bed very rocky. From the upper or north-east extremity of this flat portion of the valley of the Zhachoo, there is a road to Momay Samdong at the head of the Tachoong valley; it goes over the Pass of Seeboolah, which is just now heavily snowed, and is probably 18,000 feet high.

As this route to Lachoong is in the Sikim territory, we have been urged to take it: but I have the greatest desire to go through Thibet to the Cholamoo Lake, and get into the Lachoong valley from the north by the Donkiah Pass, and I hope to accomplish this without offence to any one. During the ascent to 16,500 feet at Phaloong, my breathing was but slightly affected; there was a feeling of faintness with a constant desire to take full inspirations, and nothing more. When standing still my respiration was not the least incommoded. After descending 1,000 feet, however, a racking headache came on, and by the time I reached Camp at Tungu, 6 p. m. it was so bad I could not sit up at all. A feeling of tightness round the occiput, as if a cord was being hard pulled on it, was very distressing, and violent vomiting ensued, which continued at intervals till daylight. The Lama and five servants who accompanied me were similarly affected sooner than I was, and their headaches also have continued till to-day. Neither Hooker nor his servants were the least affected by the ascent of yesterday; but they have been at this sort of work for three months past, and are well used to high elevations. I felt no inconvenience at elevations below 15,000 feet.

The contrast between the climate of this elevated region, and that of the central portion of Sikim is most remarkable at this season. Here the rain never falls heavily, the air is dry and bracing, and the sun's rays have an immediate effect in melting the recently fallen snow, and drying the ground. The pasture ground is very peculiar, and altogether different from what I had anticipated. I looked for undulating tracts of rich and luxuriant grass extending along the base of the perpetual snow, but with the exception of Phaloong, the grazing grounds are almost precipitously steep. They are every where covered with numerous herbs, many small, grass-like sedges, and only a few tufts of grass; this sort of vegetation, interspersed with the strong-scented dwarf rhododendrons, which at 16,000 feet and upwards cover the ground like heather, and vary from a foot to four inches in height, with bushes of dwarf juniper, barberry, rose, and rhododendron shrubs, characterises the picturesque haunts of the fearless and steady-footed yaks, goats and sheep of these regions. The yak delights in the steepest places, and when seen on the mountain side at 1,000 feet or more above you, they seem to the unpractised eye of a novice like myself to be in constant danger of tumbling down. I have often checked myself since our stay at Tungu from calling out to the Bho-tias to remove the yaks from the dangerous-looking places in which they graze. Aconites, dandelion, cowslips, a beautiful blue gentian, astragali, primroses, potentillas, and a large-leaved sage, are some of the numerous herbs which form the rich pasture in this direction, and all—except the aconites, which are carefully avoided by all native animals,—are eaten by the cattle, the condition of which is excellent, and the milk of the richest and purest quality.

October 15th.

A beautiful morning, and we at once decided on moving upwards, the Lama and the Lachen Phipun being appointed to take the Camp close up to the Kangra Lama Pass, while we were to spend the day at Phaloong, and see all the mountains which were but partially visible on the 13th, and join them in the evening. For this purpose, we started at 7 A. M. by the route already described, and soon reaching Phaloong, came upon such a scene as I never even imagined, and never saw anything to equal.

First of all, to the north there was the beautiful Kanchanjhow

mountain in all the splendour of unclouded brightness, a monster mass of brilliant snow ; to the north-east and east, the Donkiah Lah 23,000 feet ; the Seeboo Lah Pass 18,000 feet, and the Changoo Kang mountain 22,000 feet, were in equal glory ; to the west, no less lofty and brilliant, the peak of Chomiomo was full in sight ; while down the valley of Lachen to the south-west, innumerable snowy peaks of minor note closed the view behind us. Ascending the ridge which divides Phaloong from Lachen—to about 17,000 feet—our prospect was still more extended and beautiful. Here we had Kunchinjinga to the W. S. W., Kanchanjhow, E. N. E., and not 2 miles off, with the intervening downs of Phaloong as a foreground at our feet. To the north and west a fine rounded red and yellow coloured spur from Chomiomo, extending across the head of the Lachen valley to Kangra Lama, and standing in bold relief against the clearest azure sky, gave me a delightful foretaste of Thibetan scenery. The whole was such a round of novel glories, such a vast picture of splendid objects on a great scale, that I was overcome with the deepest emotion. I could not realise a landscape of this gigantic nature, distinctly and in detail, far less can I describe it. Never however shall I forget that scene ; then it was that I first found out the real depth and intensity of the hold these mountains have always had on my mind and feelings, nor did I then wonder, nor do I now, at their being objects of veneration and worship to the human beings who dwell among them.

From the ridge above Phaloong a very large glacier on the east face of Chomiomo is visible ; it discharges itself by the Chomiochoo, which falls into the Lachen five miles above Tungu. The south-east exposure of the Phaloong ridge has soil and pasture up to 17,000 feet. The north-west exposure is quite barren and rocky at that elevation ; but at 16,000 feet it is covered with a diminutive heather-like *Rhododendron*—*R. Setosum* of Hooker—lower down, the pasture is composed of small rushes, grass, and numerous herbs. The whole of Phaloong is covered with a knobby peaty soil, on which the vegetation is now browning fast under the approach of winter.

We had a fine breeze from the south all day, the air was light and bracing, sky clear and cloudless. Temp. at 2 P. M. on the flat of Phaloong 51°. Wet bulb Ther. 44°. No snow at 17,000 feet.

We saw a flock of forty wild sheep ; it is called Náá by the Bhotias,

and is the *Ovis ammonoides* of zoologists, I believe. They were basking in the sun on a hill side at 16,000 feet. The younger ones were of a bluish grey, the old ones whitish. I also fell in with a large covey—sixty or eighty—of chakoor-like birds, their flight and size that of chakoor, but they had no black bars on the wing, nor red legs. Crossed the Phaloong ridge into Lachen valley, which we ascended to our camp at “Sitong;” elevation 16,000 feet. Temp. at 6 P. M. 38°. No fire-wood. We are four miles below the Kangra Lama Pass. Some wood was brought from Tungu, eight miles. The coolies are all suffering much from headache and the cold.

Yeumchoo or Yeumtso, Thibet, 16th October.

The Ther. fell at Sitong during the night to 21°; at 7 A. M. it was 32°; a cold north wind blew down the Pass all night; at daylight the cold was intense; but as soon as the sun appeared, the north wind ceased and the temperature was delightful. We were pitched in the dry bed of a stream coming from the north-west, which rises to the north of Chomiomo. The Lachen was not a foot deep here. Kan-chaujhow towered over our heads due east of us. We heard last night that a Chinese guard was posted on the frontier at Kangra Lama to arrest our progress. We sent to see, and found it true, for they told my messenger we should not pass into Thibet, as their necks would be the forfeit if we did. This did not disturb our rest, and although hardly pressed by the Lama not to move the camp to the Pass until we had previously seen the guard, and arranged for a passage through Thibet, I resolved to move up to the frontier in the morning, and trust to what might happen there on meeting the Thibetans for the accomplishment of our wishes. The bright sun, highly rarified atmosphere, and gazing at the dazzling snow all day yesterday, have made my eyes sore and weak. I have a veil; but it blinds me to wear it. The skin of my face is inflamed, and very painful: but I have escaped all headache and discomfort from the high elevations. Hooker has not however done so, with all his practice. He feels sick and head-achy like every body else in camp, but he takes violent exercise all day on foot, whereas I have ridden whenever I could, and was able to do so almost all day yesterday.

At 8 A. M. this morning having with much difficulty started our benumbed coolies, we left “Sitong,” and marched up to the pass of

Kangra Lama ; our route lay all the way along the Lachen, Kunchin-jhow on our right, Chomiomo on our left. The valley of the Lachen opened out into flat terraces, and contracted by turns into rocky gorges, until at four miles from Sitong, gradually rising on a sloping plateau, you leave the Lachen to the left, turn the shoulder of Kanchanjhow on the right, and find yourself without any effort of ascent on this side, or any descent on the other, on the Thibetan territory, and beyond the Himalayan chain. Where this transit takes place it is a grassy open down, sloping if at all to the south, and about a mile broad from the Lachen on the west, to a swampy flat at the foot of Kunchin-jhow on the east, from which swamp a dribbling stream joins the Lachen a little way below. On this flat ground the boundary marks of Sikim and Thibet are conspicuous. They are small cairns of stones, in one of which a written certificate is annually placed by the Thibetans, that the boundary has been examined and found correct. This is the Kangra Lama Pass so to speak, but no Pass at all in the sense taken of the term in the Himalaya generally.

It is probably the easiest passage in the world through a mountain range ;* the elevation at the frontier pillars is 16,500 feet.

A mile below the boundary two Thibetans, who had been watching our progress up the valley, joined us. They were not armed, but I suspected their purpose of stopping us, and had them questioned. They admitted they were Thibetans : and asserted that the ground we were then on was Thibetan. I told them that we were in Sikim, which was the case ; and as I had found them in Sikim, and ignorant of the proper boundary line, I should regard them as Sikimites for the rest of the day. They walked ahead quietly until I passed the cairn ; then they commenced calling out to their comrades who were encamped close by, and objected to our progress, but offered no actual obstruction to it.

Feeling that this mode of proceeding would not answer, and at the earnest desire of the Lama who was becoming alarmed at being implicated in a trespass on Thibet, I stopped close to the cairn, and asked to see the officer commanding the Thibetan guard, to whom I wished to communicate my reasons for desiring a passage through

* More correctly speaking the easiest termination to a passage, for the real passage through the chain is the Lachen which arises beyond it.

Thibet to the Donkiah Pass. After some delay, the Dingpun commanding the party with the Deputy of the Soobah of Kambajong, and fifteen sepoy, came up. I told the Dingpun that I had come up the Lachen valley to his frontier on business, and to see the country, that I had also to go to the Lachoong valley and the Donkiah Pass, and that there were three ways of doing this. One was to march back to Choongtam and up the Lachoong; this would take me ten days. The second was to cross the Seeboolah Pass from the head of the Lachen to Samdong in the Lachoong valley; but that route was deeply snowed and dangerous. The third, the most obvious, and the easiest, was to go round the northern base of Kanchanjhow, and come out by the Donkiah Pass, and I wished to encamp that night at Yeuntso, going on to the Pass by Cholamoo without delay. I said I knew that the route proposed was not inhabited, that therefore no one could be alarmed or inconvenienced by our passage, and as it would greatly convenience us, it was not I thought worth their while to make us go back so far, or to endanger our lives by braving the Seeboolah Pass after the recent heavy fall of snow. There was much more talk between the Thibetan party and my friend the Lama about the propriety of my waiting for instructions from Kambajong, which the Dingpun suggested he would ask for, the unprecedented nature of my request, and how all their throats might be cut by orders from Lassa, if a passage was effected by our party. The talking might have lasted a week without any result; at all events I thought so, and time was precious: to cut it short therefore, and be no longer standing idle at the Rubicon, I told the Dingpun I would with his leave move on, and I did so accordingly on foot, and unopposed by word or deed from any one; leaving the Lama and all our people to arrange with the Dingpun about our followers and baggage to follow me at his leisure. Hooker rode straight on into Thibet when I stopped to parley with the Dingpun, and I saw no more of him that day till we met at Yamchoo in the afternoon, after he had been all the way to the Chalamoo Lake, and whence he was then returning towards Kangra Lama in search of me, not being aware that I had followed him.

Leaving Kangra Lama at 11 A. M. stick in hand, and with a cloth cloak carried over my shoulder to insure some covering for the night, and followed by one chapprassey—Seetaram,—who had uot the good

sense to bring on the pony when I left the Dingpun, I ascended a gentle grassy slope in a north-easterly direction for less than a mile, when I came upon a flat expanse of three miles broad, bounded on the right—south—by Kanchanjhow, on the left—north—by a fine red spur of Chomiomo; the Lachen flowing very slowly and in a trifling stream nearly in the centre of the flat expanse. There were about 100 yaks feeding on this expanse. They were tended by a dozen robust Thibetans, who stared at me in dumb amazement; their black hair cloth tents were pitched close by, each with a huge black and tame watch dog at the entrance, and some rosy-cheeked children playing around. The pasture was short, quite scorched by the frost and sun, and crumbled under my feet like snuff. The sun was bright and very hot, the air dry and elastic, the sky blue and quite cloudless, not a tree, shrub, or herbaceous plant to be seen. I waited a little to wonder at this change, so great, from the moist forests, and cloudy skies of Sikim, and then moved on without any guide, keeping close by the base of Kanchanjhow, its nobly expanded sides, and rounded summit of unbroken snow towering over my head to the south of me. Hugging the base of Kanchanjhow, and at an elevation of about 400 feet above the Lachen, I kept on due east till 2 P. M., when I reached a rocky spur from the mountain, from which I saw the Yeumtso Lake to the north and east of me. Halted here for Seetaram, who lagged behind, having been attacked with fever since we started in the morning. I had a good deal of oppressed breathing, although I walked slowly, and my pulse had been 108 all the way. The prospect at this point is very fine. To the south, there is an immense saddle of snow, probably two miles broad, lying between two peaks of Kanchanjhow; below me to the north is the valley of the Lachen, flat, with the river winding through a whitish expanse of sandy like deposit—Carb. of soda. To the east and trending north a fine red mountain—a spur from Kanchanjhow, which divides the Yeumtso and the Cholamoo Lakes. To the north-east the view is closed by a table-land, bare and scorched, which stretching from Donkiah bounds the Lachen valley in that direction, and is lost in the undulating downs to the north, which seem to extend for ten miles at least in that direction and towards Geree. To the north—and over a rocky range of red and white quartz which bounds the Lachen valley to the north—and about forty

miles off as far as I can guess, is seen a long range of sapphire blue hills running east and west, the west end peaks north of Kambajong tipped with snow. To the west, and closing the Lachen valley, the great peak of Chomiomo rises to 22,000 feet, a splendid mass of perpetual snow north-west, and very distant, 60 or 70 miles perhaps, are seen three lofty snowy mountains. They must, I consider, be quite as far north as Digarchi, but to the west of it, and from the extent of snow on them in a position where the snow line may be taken at 20,000 feet, their elevation is probably 24,000 feet or more.

From this spur I descended in a northerly direction over rocks and stones to the outlet of the Yeumtso Lake, which I reached at 3 p. m. very tired indeed and foot sore. I carried Hooker's barometer for the last two miles, as the chupprassie was quite ill and scarcely able to walk. Here I made up my mind to pass the night, a dreary prospect enough, without shelter, food or clothing, at an elevation of 17,000 feet. I saw nothing else for it; I could not walk back to Kangra Lama, nor did I know whether I should find my people there if I did, and my companion—the chapprassie—was quite unable to do so. He had a blanket cloak only, and I mine, to cover us; a bit of ginger-bread, and an old ship biscuit, was all we had to depend on for food: I saw no signs of any one following us, and was quite ignorant of Hooker's whereabouts, as we parted without any understanding about meeting. He had a horse, but no attendant. I had no horse but had a companion, and in this plight were we wandering during our first day in Thibet. From the outlet of the Lake to which I descended, and where I intended to bivouac for the night, the scene was very striking, and was thus noted by me at the time, "I now sit in a position from which all is superb; it is at the outlet of the Yeumtso Lake at its north-east angle. The water is of a pale green colour, and a southerly breeze, descending from an extensive glacier which feeds the Lake, is carrying a swelling ripple to my feet. The form of the Lake is irregular, longer from north to south than from east to west and about three miles round. It stretches before me to the base of an immense bed of glacial snow, which runs far back—south—into the masses of Kanchanjhow, and which is raised about 100 feet at its lowest part above the Lake, into which is discharged a trickling stream now frozen over. To the south-west is the enormous

saddle of snow noted before, and dividing two peaks of Kanchanjhow, a feeder from this saddle running easterly also supplies the Lake at the south-west extremity.

Further to the west is the great rounded summit of Kanchanjhow, of towering height and dazzling brightness.

To the north east, a fine red and yellow spur from Kanchanjhow, which divides the Lake from the Cholamoo one, and to the west the rocky and bare spur from which I have just descended.

The eastern bank of the Lake is grassy, and now scorched, along the water's edge, but high and rocky beyond. On the west it is abrupt and rocky. The outlet is thirty paces across : but the stream is not a foot deep, nor more than 5 feet wide. The air is excessively dry, parching up my lips and cracking the skin of my face ; the sun is hot, but the wind is bitterly cold, and sudden blasts from the mountain raise whirlwinds of dust. The base of the mountain is not half a mile from the Lake ; it rises quite abruptly. Snow is lying deep in the hollow places to within 200 feet of its base, and is sprinkled to the same line on the steepest places, which are of solid rock.*

Not a plant is to be seen in the Lake, nor on its stony margin. Not a fish, or shell, in its waters ; nor any saline deposit near it, but its water is sweet : the sky is clear, brilliant and blue, and all around is new and most imposing. Oh that I could paint or draw ! and how delightful it would be to sail, or row, on the green rippling waters of this little Lake now for the first time spied by European eyes !

As I had done inspecting and admiring the Lake, the Lama came up much fatigued and breathing very hard ; his presence relieved me of all apprehension about being out all night, as he told me our tents and baggage were coming up. Hooker says it would have killed us at the present temperature of the night to have lain in the open air ; and I dare say he is right. The Lama told me that after I had started from Kangra Lama, the Thibetan guard had agreed to allow our people to follow me, and that Hooker was at Yeumtso close by, where we were to pitch for the night. This was good news ; I descended a short way, and found him there quite knocked up, and with a violent headache, the effect of great exertion at this elevation, 16,800 feet. We

* The snow line on the northern face of Kanchanjhow in October may be taken at 18,000 feet.

were both glad to lie on the ground, cold as it was, till 6 o'clock, when the tents came up.

As we lay shivering, the Thibetan guard, which had accompanied our baggage from Kangra Lama, came marching in. It consisted of an officer and fifteen men, dressed in ragged blue cloth cloaks bound round the waist with yellow girdles, cloth boots of various colours—red, green and blue, and black felt caps; each man carried a load of clothes and a matchlock strapped across his back, from which projected a forked rest, like antelope's horns; a bow and some arrows with an old cartridge pouch completed their equipment.

The Dingpun, or officer in command on the part of the Chinese government at Lassa—and the Lt. of the Kambajong Soobah—a civil officer—brought up the rear, mounted on yaks with high saddles over which, and under, a quantity of bedding, warm clothes and other articles were stowed in the bunchiest and least military fashion possible. These officers did not carry any arms. The Dingpun was dressed in green with a large orange-coloured cap, in the crown of which was a round brass button, the sign of his rank. He was not five feet high; he was sixty years of age, very fat, dark-complexioned, smiling and very greasy; his countenance was a picture of indecision and imbecility, and he did not belie it in any way. I shall however say no more to his discredit. I wish him most heartily a long life and great promotion in the ragamuffin band to which he belongs, with the happiest reminiscences for gratifying us as he has done on this occasion. The guard is to accompany us to the Donkiah Pass, and see us fairly out of Thibet, so that we may now expect to part very good friends, and I hope we shall do so.

We are pitched inside the kraals, or square enclosures of loose stone used by the migrating yak herds of Thibet for pitching their black tents in, and our people are crowded round large fires of yak dung, the only fuel this country affords. These fires give a great deal of heat, but are attended with interminable and intolerable smoke, and are not at all suited for cooking. The flavour of all roasted, toasted and grilled articles is disagreeable, and it is very difficult to get any thing fully cooked where the boiling point of water is so low.

This may be one reason for the Thibetans always eating their animal food dried and raw, instead of cooked as we do. I am very headachy

after my long and elevated work ; all my servants and coolies worse off from the same cause, and the extreme cold, some of them being very ill indeed and unable to move. They have come over Kangra Lama, 16,000 feet, and have ascended 6 or 800 feet more in coming here, swollen faces and inflamed eyes are numerous among them. My own face and eyes are quite red and much inflamed. The glare from Kanchanjhow was excessive, but I could not keep my eyes off, so attractive was the novelty of being all day along the base of its perpetual snow. Thermometer at 6 P. M. 34° ; a light breeze from the south ; calm at 9 P. M. with a sky of the clearest blue. Temp. at 10 P. M. 26° .

October 17th.

Halt at Yeumtso to see about us, and for Hooker's meteorological observations, &c. Thermometer at 6 A. M. 10° . Wet bulb do. $9\frac{1}{2}$; minimum temperature during the night 5° . A black bulb thermometer placed in a radiating metallic bowl fell to 3° . Ther. in our small tent at 6 A. M. 14° . The sun rose with us at 6 hours 40 minutes. Heavy hoar frost on the grass, and the marshy pools along the Lachen and close to us are frozen over since last evening.

It is a brilliant morning with a light air from the north-east, and I am enchanted with this near sight of Kanchanjhow.

9 A. M. Ther. 32° , brilliant sunshine ; all my people and the Lama's people also are very ill with head-ache and vomiting ; some of the coolies have dropsical swellings of the face and feet, and none of them can eat ; they lie on their faces and knees in the sun, pressing their heads with their hands, and are quite as wretched as any sea-sick people I ever saw. Hooker's fellows are well and lively.

The Dingpun and his men have paid us a friendly visit in our tent. We have regaled them all with snuff and rum and water. The few English articles we have with us, have been much admired by them, especially a detonating gun, pistols, telescope, and our broad-cloth coats. I presented the Commandant with a Tartan shawl and some rupees for a dinner to his men, which made them all vastly well pleased. The Dingpun despatched a report of our progress to his superior officers at Kambajong while in our tent. Went to the Yeumtso Lake with Hooker, collected some minerals, found ice half an inch thick along its margin at 11 A. M. ; reckon it to be three miles round or more, and

found it 10 feet deep at 20 feet from the shore. Small pieces of blue slate numerous on the east bank only, and a white tasteless substance on the grassy banks—Pen. or Carb. of soda. There were large flocks of the Brahminy duck, with a few grey geese, and widgeon on the water. Not an insect to be seen: but large flocks of grey “stone chats” flew about the rocky places. Holes of the “goomchen,” or tailless rat, were very numerous about our tent at Yeumtso, as well as burrows of the marmot called Kadiapen.*

Thermometer at noon 52° , wet bulb do. 37° , a fine breeze with a delightful feeling of elasticity and dryness in the air. The brightness of the sun is incomparable, the sky is of the clearest blue. The great mountain ranges of Kambajong, and far to the northward and westward, of brown and reddish hue tipped with sapphire blue, and with perpetual snow, with the intervening plateaux of Cholamoo and Geree in yellow grass and fading herbage, all united make this country to my taste a most attractive one at this season, notwithstanding the excessive cold, its utter barrenness, and total want of population.

In the afternoon we crossed the valley of the Lachen from Yeumtso due north; it is a bed of white and bare sand, a mile and a half wide, the stream running tortuously, very slowly, and not a foot deep towards the west. Ascended the rocky range immediately bounding the valley to the north; it is 500 to 800 feet above the river, and composed chiefly of a close white and pink quartz,† with large rounded masses of gneiss and gneiss rubble. Crossing this ridge, but without

* During our short stay in Thibet we fell in with the Goa antelope, another antelope larger than it, but smaller than the Chiru, a very handsome large fox, reddish brown with a bushy grey tail, a hare or rabbit frequenting rocky places, light grey, with white scut and a patch of dark bluish grey over the croup. This animal was abundant; it always ran with its ears erect, and lastly, we saw the Kiang, or wild ass, on the open downs between Yeumtso and Geree. The country about Chumulai is always indicated as the favourite ground of the Kiang, and I was told that it did not visit this part of Thibet except at the warmer seasons. In November it would be too cold for it hereabouts. The long ears, scanty mane, scanty and short tail, give this creature an entirely asinine appearance, and not at all the appearance of a horse. Dr. Hooker and I have forwarded complete skins of the male, female, and young colt to the Museum of the Asiatic Society, Calcutta, through Dr. O'Shaughnessy.

† Hares very abundant here.

any descent, we came upon a grassy plateau two miles long, the east end of which slopes to the south and drains into the Lachen, but it bore no marks of water-ways.

In the centre was a small Lake, the edges of which were then frozen, and this was the depository of all the remaining waters of the plateau, for there was no slope or outlet to the west. An examination of this small plateau gave me the first satisfactory explanation of the constant assertion of the Thibetans, that in travelling over the more level portions of their country "*there are no streams of water.*" The annual fall of rain and snow is represented as being exceedingly small in the aggregate, and never to be at all heavy, while the evaporation is very rapid.* This with a sandy soil, and the existence of numerous depressions forming shallow Lakes, will account for the disposal of much of the Thibetan waters, and for the extreme difficulty of ascertaining the situation of streams, but except in the mountains, in which the valleys are said to be very narrow and to contain permanent water-courses, I believe there are no constantly running streams at all in Thibet. I can speak in this respect to the plateau extending north-west from the smaller one noted above, to the Kambajong range of hills, and which is certainly ten miles square. There is not a drop of running water in the whole of it. There is a water-course with a general north-west direction, which I went along from its origin for six miles; but it was perfectly dry, and the slope was quite trivial. The drainage from this plateau is to the north-west, and goes, I believe, into a feeder of the Arun—a Nipal river. This plateau of Cholamoo and Geree is bounded on the east by a broad flat spur from Donkiah, which terminates the Lachen valley to the east, to the north and north-east by the Kambajong range of mountains, and to the south by the hill of Bhomtso, and the smaller plateaux lying to the north of the rocky range which bounds the valley of the Lachen. Probable elevation of the plateau 17,500 feet; it is composed of yellowish sand and stone, pasture very scanty indeed. Antelopes and Kiang seen on it, and I fell in with a flock of four hundred very fine large sheep. They were hornless, generally black, or brown faced, and were tended by one man only without a dog. He walked slowly in the middle, keeping up a sort of grunting noise to the flock which

* The Wet Bulb Ther. stood 22° degrees below the temperature of the air.

grazed and moved onwards whichever way he did. There was one remarkably fine ram among them; his fleece reached the ground, his back was painted bright red. The wool of these sheep is of a superior sort. The flesh we ate was flavourless, but short in the grain and tender. The flock belonged to Geree; I believe I never saw any one look so much surprised as the shepherd did when I rode up to him.

Ther. at Yeumtso, 6 P. M. 36° , at 8 P. M. 29° , radiating do. 20° .

October 18th.

6 A. M. Yeumtso. The Ther. fell during the night to 5° , radiating do. to 2° . Water in vessels on the tent table frozen to a mass of ice. Ther. at sunrise 15° . We move our camp to-day to the Cholamoo Lake, where we shall join it in the evening, going in the mean time to Bhomtso mountain five miles north of this, and 1,400 feet higher, total elevation about 18,000 feet. Hooker wishes to amend his geography by a careful round of bearings, and especially to see to the position of Chumulari. Reached Bhomtso or Bhomcha—elevation 18,500 feet—at 10 A. M. followed by a detachment of the Thibetan guard, who were very anxious for us to go direct to our camp. They felt the cold excessively, and finding us unwilling to accompany them set off themselves, leaving us to our own devices. Ther. at 11 A. M. 44° , Wet Bulb 22° , and strong breeze from the north-west cuttingly cold. No sickness or head-ache to-day, but walking brings on laborious breathing. We remained on Bhomtso till the afternoon, Hooker taking bearings with the Theodolite, and observations with the Barometer, the boiling point, the Wet Bulb, &c. &c. and had indeed a rare day of it. A great extent of Thibet was laid out before us without a cloud to obscure the view, and it was equally fine to the south. In the far south-west forty miles off we had a view of Kanchanjinga still the king of all the Sikim mountains, its north-east aspect being no less grand from Thibet than its southern one is from Darjeeling, although from the former it appears hemmed in by numerous lateral peaks and mountains of perpetual snow. Immediately south-west-south and south-east of us was a noble line of mountains formed by Chomionio, Kanchanjhow and Donkiah, all 23,000 feet or more,* and not more than six miles lineal distance. To the east and in line with the above, we saw a great range of perpetual snow mountains indicated

* Donkiah misnamed "Powhunry," by Col. Waugh is measured 23,000.

as Chomulari by the Thibetan soldiers, and, as far as Hooker could calculate then, they occupied the position assigned to that celebrated mountain by Captain Turner.

What could exceed in grandeur such a galaxy of immense mountains as we had in view from Bhomtso to the south and east? Nothing that I know of. But the view to the north, north-west and north-east stretching into Thibet was quite as striking. After descending from Bhomtso, Hooker botanised the bed of the Lachen, and we found a bed of blue slate on the south side of the Lachen valley, which would be valuable for roofing if more accessible.

Before reaching our tents at Cholamoo it got quite dark, we had no guide to our camp, and instead of going to the eastern bank of the Lake where it was pitched, we kept the west side, going towards the Donkia mountain till we came upon snow. Here we found out our mistake by shouts from the opposite side, and had to retrace our steps to the outlet to enable us to cross over two miles of rocky and swampy ground in pitchy darkness; but we got in by 8 o'clock, all right, and very tired.

(To be continued.)

Influence of the Moon on the Weather.—By J. W. BEALE, Esq.,
Agra College.

At the desire of Mr. Middleton, the Principal of the Agra College, I have, during the past year, followed up the observations made by him in 1850 and printed in Journal CCXX. of the Society, with the view to determine whether the prejudice so universally received in India, especially by the Christian community, of the moon's influence in producing a change of weather, be correctly founded or otherwise.

The observations were made generally twice in a day, and sometimes oftener, when any change in the state of the weather seemed to require it. The reductions from the larger tables have been made exactly in the same way as in the former year, each lunation being divided into New-Moon, Full-Moon, second and last periods; each

period consisting of seven days, having the day on which the New or Full Moon fell, or the second or last quarter began, on the middle of the hebdomadal period, and having three days reckoned on each side of it, making it thus equal to seven days.

The number of days during which rain fell last year, exceeds the number of days of the former year, by 11, and the quantity by 5.4 inches ; while the number of days which were cloudy without rain last year, exceeds the number of the year before by 45. The number of Storms recorded last year being double the number noted in the previous year.

Again, by referring to the accompanying Table No. 2, we remark as a curious fact that the number of rainy days in the New and Full Moon periods, and the number in the second and last periods, are very nearly equal ; the number of days during which the east wind was prevalent in each pair of periods being also nearly equal to the number of rainy days in the same pair ; while the number of cloudy days in each pair is double of the number of rainy ones in it, but the quantity of rain which fell during the second and last periods is almost double of the quantity in the New and Full Moon periods. This circumstance alone stands quite at variance with, and in fact opposed to, the result obtained by the observations made in the foregoing year, and would go far to negative the truth of the moon's influence, and to disprove the correctness of the prejudice, if the observations of a single year could be thought sufficient to do so. But time alone can prove this, and a series of observations extending over a number of years and made at various places, is necessary before we can be said to have arrived at any thing like certainty.

In conclusion I would add, that the data from which the reductions for the quantity of rain are made, were kindly furnished me by Mr. Middleton.

Table I.

Summary for each Period.	Cloud and Rain.		Quantity of rain in Inches.	Direction of Wind.						Variable Winds.	Storms.		
	* Cloudy days.	Rainy days.		East.	West.	North.	South.	N.E.	S.E.			N.W.	S.W.
13 New Moon Periods.	35	15	2.13	17	21	12	4	45	0	10	3	2. E. to W. 2. N. to W. 2. W. to N. 1. S. to E. 2. N. to N.E. 1. N.W. to S. 1. N.W. to W. 1. S. to S.E. 1. S.E. to E., 1. W. to E. 2. E. to N. 5. W. to N. 1. N. to E. . . .	5 5
13 Second Pe- riods.	33	23	13.47	17	34	9	2	8	5	7	1	2. E. to W. 1. N. to W. 1. S. to E. 1. E. to N. 3. N. to E. 1. E. to S. 1. S. to W. 2. W. to E. 1. W. to S. 1. S. W. to W. 2. W. to S.W. 1 N. to N.W. 1. E. to W. 2. W. to N. 2. N. to W. 3. N. to E. 1. W. to S. 1. W. to E. 1. W. to N.W.,	

Table II.

Summary.	Cloud and Rain.		Quantity of rain in Inches.	Direction of Wind.						Variable Winds.	Storm.	Haze.		
	* Cloudy days.	Rainy days.		East.	West.	North.	South.	N.E.	S.E.				N.W.	S.W.
3 New Moon and 12 Full Moon Pe-riods.	70	35	9.10	34	43	24	7	24	3	13	3	{ 4. E to W. 3. N. to W. 2. S. to E. 1. E. to N. 3. N. to E. 1. E. to S. 1. S. to W. 2. W. to E. 1. W. to S. 1. S. W. to W. 2. W. to S. W. 1. N. to N. W. 2. W. to N. 2. N. to N. E. 1. N. W. to S. 1. N. W. to N. 1. S. to S. E. 1. S. E. to E., 1. E. to W. 2. N. to W. 7. W. to N. 4. N. to E. 1. W. to S. 1. W. to E. 1. W. to N. W. 2. W. to E. 2. E. to N.,..... }	12	2
3 Second and 12 Last Pe-riods.	62	34	16.65	31	66	17	7	21	6	14	1	{ 1. E. to W. 2. N. to W. 7. W. to N. 4. N. to E. 1. W. to S. 1. W. to E. 1. W. to N. W. 2. W. to E. 2. E. to N.,..... }	16	1
Grand Total,	132	69	25.75	65	109	41	14	45	9	27	4	51	28	3

* Days Cloudy without Rain.

The Mausoleum of the Nuwabs Ali-Verdi Khan and Sooraj-ood-Dowlah, at Khooshbagh, near Moorshedabad. By Capt. F. P. LAYARD, 19th Regiment Bengal Native Infantry.

On the right bank of the river Bhaguruttee, at a distance of about two miles below the city of Moorshedabad, surrounded by a low brick wall, and embedded in fine old trees and garden shrubs, stands the mausoleum of two men famous in the annals of the history of Bengal; one as much for his virtues and soldier-like qualities, as the other for his vices and the meanness of his nature.

These men were the Nuwab Ali-Verdi Khan Mohabut Jung, and his grand-nephew, Mirza Mahmud, who, on succeeding to the *musnud* of Bengal, assumed the title of Chiragee-ood-Dowlah,* or, as he is more generally called by Europeans, Sooraj-ood-Dowlah.

The enclosure called Khooshbagh, containing the mausoleum with other buildings and out-offices attached, cover a space of nearly nineteen beegahs of land. From a statement made by the grand-daughter of Lootf-oon-Nissa Begum, the wife of Sooraj-ood-Dowlah, to Mr. J. E. Harrington, the Collector of Moorshedabad in January, 1791, it appears that an assignment of Sicca Rupees 305 per month was originally fixed by the Nuwab Ali-Verdi Khan on the collections of Bundardeh and Nawabgunge, in the Khas Talooks near Moorshedabad for the care and attendant expenses of the burial ground.

It would thus appear, that Khooshbagh was used as a cemetery previously to the death of Ali Verdi Khan, and its first establishment may no doubt be fixed, from the time of the decease of the good Nuwab's mother, who lies buried within a small elevated enclosed platform, in the centre of the outer quadrangle or garden, (*vide* Plan No. 1). This quadrangle may probably have constituted the entire space originally occupied by the cemetery, the grounds having been subsequently increased by Sooraj-ood-Dowlah on the death of his grand-uncle in 1756.

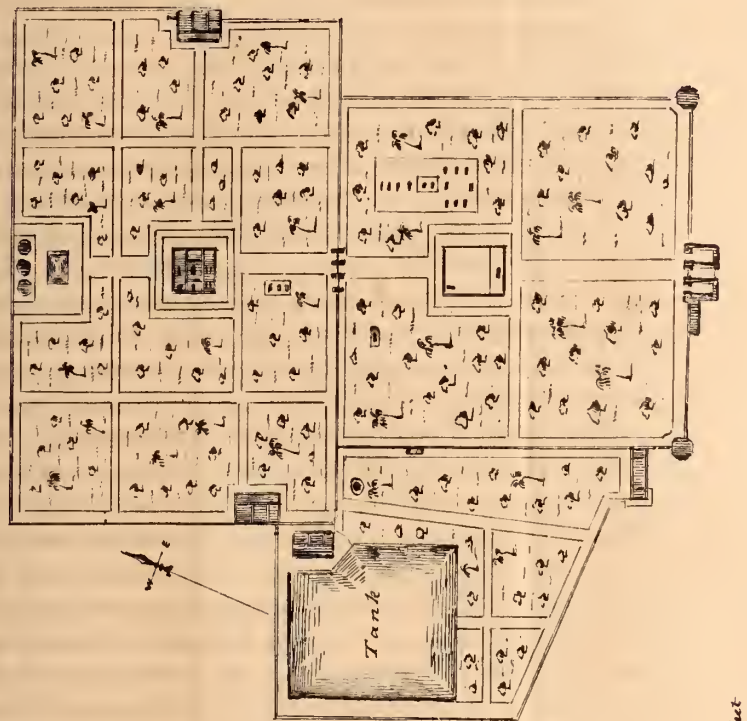
The grounds attached to the mausoleum, now consist of three separate enclosures, surrounded by walls varying in height from six to

* Orme, Vol. II., page 48.

PLAN of the GROUND and BUILDINGS attached to the MAUSOLEUM at KHOOSH BAGH

REFERENCES.

- a. Mausoleum (see Plan No II)
- b. Mosque & Hauj
- c. Khari Khanah
- d. Tichleel Khanah
- e. Bytheek Khanah
- f. Mussafir Khanah
- g. Tombs of a Son in Law & 2 Daughters
of Sooraj-ood Dowlah
- h. Tomb of Kali Begum
- i. Tomb of the mother of Ali-verdi Khaw
- k. Tomb of the Sister of D^o
- l. --- of Nawab Bairam Jung
- m. --- of Nawab Mozuffur Jung
- n. --- of Rabia Begum
- o. Old Watergate & Guard House
- p. Bastions
- q. Wall pierced for Musquetry



Scale

0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 feet



thirteen feet. The outer quadrangle is entered by an old gateway with double iron-studded doors, and a dark guard-room on each side. In front of the gate, is a Ghât, which formerly led down to the river, only a few steps are now visible, the remainder having long since disappeared under the new formed alluvial soil, the stream being now nearly half a mile distant. This land is under cultivation for Indigo. According to Native report it is fifty years since the Bhaguruttee ran under the walls of Khooshbagh.

The wall facing the river is pierced for musquetry and flanked by octagon bastions, having approaches to their summits by flights of steps built in the wall.

The three enclosures are laid out as gardens, with neatly trimmed hedges bordering the walks. The flowers cultivated in the gardens are used in adorning the tombs of the Nuwabs and of the different members of their families scattered about the grounds. Many fine old jack and peepul trees, with here and there a graceful cocoanut, exclude the fierce ray of a tropical sun, and afford a cool and pleasant retreat for the devout, who frequent the tombs for prayer or meditation, during the heat of the day.

The inner face of the wall of the outer quadrangle, shows traces of its having been formerly painted in fresco in white and red stripes, but damp and neglect have nearly obliterated the colours. Many foundations of small dwelling-houses are still to be seen in this quadrangle; these no doubt at one time afforded shelter for the servants attached to the cemetery.

The tombs in this enclosure are 18 in number, the principal being those of the mother and sister of Ali Verdi-Khan (l & m Plate No. 1). These are enclosed, as before mentioned, by a wall, and raised on a platform; they, as well as all the tombs in Khooshbagh, with the exception of two, bear no inscriptions. On a second platform to the right of this, there are fifteen tombs of different members of the family, amongst them, are those of the Nuwab Bairam Jung (n 1 Plate 1) and of his father the Nuwab Muzuffir Jung (n 2 Plate 1), as also of Rabia Begum.

On the two first named tombs there are inscriptions: that on the tomb of Muzuffir Jung runs as follows:

He was the Naib or Deputy of the Nuwab Moobarick-ood-Dowlah, the fourth in succession from the traitor Meer Jaffier placed on the musnud of Bengal by Lord Clive after the battle of Plassy, and a person of some consequence during the time of Warren Hastings. He died in A. H. 1194 (A. D. 1797).

The Inscription on the tomb of his son Bairam Jung is as follows :

بسم الله الرحمن الرحيم
 الله لا اله الا هو الحي القيوم لا تاخذه سنة ولا نوم له ما فى السموات
 وما فى الارض من ذلك لذي يشفع عنده الا باذنه يعلم ما بين ايديهم
 وما خلفهم ولا يحيطون بشئ من علمه الا بما شاء وسع كرسيه السموات
 والارض ولا يؤوده حفظهما وهو العلي العظيم *
 عمدة الملك اشرف الدوله زين سراى فذا چورخ بنهفت
 سال رحلت زغيب بادل راز رضي الله عنه هاتف گفت
 سنه ۱۲۰۲

He died in A. H. 1269 (A. D. 1785).

Rabia Begum was a daughter of Haji Mahommed, the brother of Ali-Verdi Khan, who was Prime Minister at the Court of the Nuwab Sujah Khan in 1725.

A small raised tomb to the left of the centre platform, marks the resting place of Kali Begum, (V. K Plan 1), the daughter of Nuwab Mahommed Ameen Khan, and niece of Ali-Vardi Khan, probably by his wife's side, as Ali-Verdi is said to have had only one brother.

Passing through a neat three-arched gateway, the mausoleum enclosure is entered ; it is like the outer quadrangle in its arrangement of trees and garden shrubs, but contains besides the mausoleum, a mosque and two buildings allotted to the establishment kept up by Government for the care of the tomb. One of these buildings, (*vide* Plan 1) is the kari-khanah or store-house, the other, the tuhbeel-khanah or treasury, but portions are also occupied by certain ladies, the descendants of Ali-Verdi's family.

On entering the gate, three graves are shown on the left, in which are said to have been buried a son-in-law, and two daughters of Sooraj-ood-Dowlah, but according to a written statement left by the

grand-daughters of the Nuwab, dated in December 1790, a copy of which is preserved amongst the records, in the hands of the mookhtyar in charge of the cemetery; he is said to have had only one child, a daughter, named Umoot-is-Saira Begum, who died during the life time of her mother Lootf-oon-nissa Begum. The graves may, however, be the resting places of this lady and one of her four daughters by Nuwab Assud Ali Khan, whom she married in 1767.

The mausoleum is a neat brick building, with little of oriental architecture in its form, excepting the four small minarets at the corner, and its projecting eaves (*vide* Plan II.). It is raised two feet from the ground, and approached by small flights of steps to the east and west. The principal portion, in which are the tombs, is a square of about 37 feet divided into an enclosed verandah on the east and west side, the whole length of the building, and two smaller verandahs on the north and south, leaving thus a square room in the centre which contains the tomb of Ali-Verdi Khan. The tomb rooms are again closed in by a verandah with five arched openings in each face.

All the tombs in the mausoleum are covered with palls of dark cloth, spangled with flowers and other ornaments in gold and silver leaf; lights are continually kept burning, and fresh flowers daily strewed on the graves.

Ali-Verdi Khan died at Moorshedabad at the age of 80, at 2 P. M. on Saturday the 9th Rujub A. H. 1169 (A. D. 9th April, 1756), and was buried at 2 o'clock, on the morning of the 10th. His first resting place does not appear to have been in the mausoleum, but on the centre platform in the outer quadrangle near the grave of his mother. On the mausoleum being completed by Sooraj-ood-Dowlah, the body was disinterred and laid in its present tomb (a. Pl. II.) under the black stone, which is said to have burst assunder with a loud report on being lowered over the corpse of the aged Nuwab. The crack is still shown to visitors!

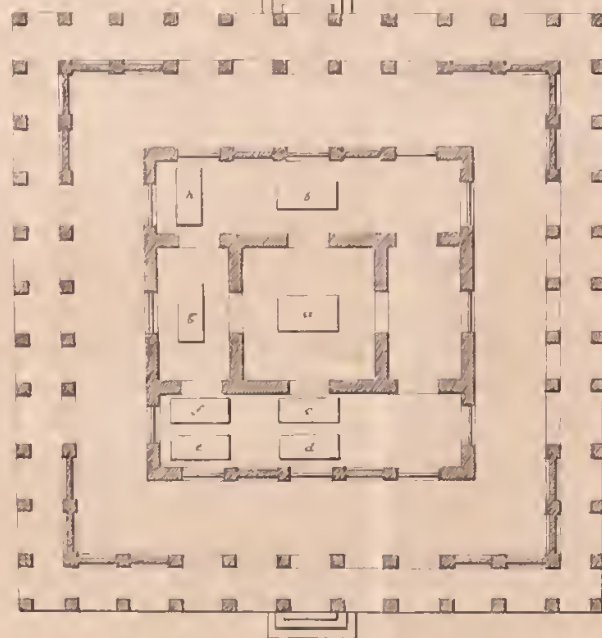
Ali-Verdi, according to tradition at Moorshedabad, is said to have died of a sickness called Istiská (اِسْتِسْكَ), which I understood to indicate dropsy, but which was described to me, to have been a disease of a most painful and lingering nature, where an unsatiable and unquenchable craving for water, carried off its victim in great agony even in the act of drinking.

PLAN OF THE MAUSOLEUM AT KHOOSHBAGH

Plan II.



ELEVATION



SECTION



References.

- a Tomb of Ali Verdi Khan
- b D^r of Haidar D^r
- c D^r of Nizam and Ibrahim
- d D^r of Mirza Mehmed a Ghouse
of D^r
- e D^r of Mirza Mehmed and Ali D^r
D^r
- f D^r of a Son of above
- a D^r of Mirza Mehmed a Ghouse
with a Son, viz. Ibrahim
- b D^r of Mirza Mehmed
(continued)

The second tomb in importance, is that of the Nuwab Sooraj-ood Dowlah of "Black Hole" notoriety. (c. Plan II.) The death of this vicious prince, who perished in the 20th year of his age, in July, 1757, is fully recorded in Orme's History of Hindustan,* but differs somewhat from the tradition amongst the natives at Moorshedabad. Orme declares the guards of Meerun, the son of Meer Jaffier Ali, to have received with alacrity, their master's orders to slay their prisoner, whereas it is said, that, on Meerun directing the guard to bring him the head of the deposed prince, they all refused, with the exception of one man named Mahomed Beg, a fosterbrother of Sooraj-ood Dowlah, who in accepting the cruel mission added these words: "I will erase from the face of the world the picture of Sooraj-ood Dowlah." He then proceeded, scimitar in hand, into the presence of his victim, who seeing him thus armed said, "O Mahomed Beg! are you come to kill me, or do you bring a message from Meerun?" The wretch replied, that he was the bearer of no message, but came to kill him, and immediately severed his head from his body. The mangled remains were afterwards paraded through the streets of the city on an elephant, and the murderer† highly rewarded by Meerun.‡

The tomb in the centre of the west verandah, (b. Pl. II.) contains the remains of the wife of Ali-Verdi Khan, who was known by the title of the Nawab Begum, but her name, or that of her father, does not appear to be mentioned in any History of Bengal which I have had the opportunity of consulting. She is said to have been the only wife of Ali-Verdi, and on one occasion to have played an important part in the eventful reign of her lord, during his wars with Boscar Rao, the Maharhatta, when the latter and all his attendants were treacherously slain in a tent, at a conference with Ali-Verdi, under the safeguard of an oath on the Koran.§

To the left, in the same verandah (h. Pl. II.), is the tomb of Oomut-il Mehndi, called the *Nowasi*, being the grand-daughter of Sooraj-ood Dowlah. She married Syud Mahomed Hussein Khan, a son of Syud Hussein Khan Bahadoor Selabut Jung.

* Vol. 2nd, page 184.

† Mahomed Beg died at Moorshedabad, where his tomb has been pointed out to me.

‡ Stewart's account is somewhat similar to this. § Orme, vol. 2nd, p. 36.

In the south verandah (g. Pl. II.) lies Lootf-oon-Nissa Begum, the wife of Sooraj-ood Dowlah, who died on the 5th Assin A. H. 1197, corresponding to 18th September, 1790, A. D. This lady was the companion of her husband in his flight from Moorshedabad to Rajemahal after his defeat at Plassey. On the murder of the Nuwab, she, together with the aged wife of Ali-Verdi Khan, and her four grand-daughters Shuruf-oon Nissa,* Usmut-oon Nissa,† Sehkeenah‡ and Oomut-il Mehndi were sent to Dacca by the Nuwab Meer Jaffier Ali Khan, but after the expiration of ten years were recalled by the Naib Muzuffir Jung in the reign of Moobarick-ood Dowlah. Mr. Forster, writing in 1781, mentions the widowed Begum as frequently visiting the tomb of her deceased husband and performing ceremonies of mourning to his memory. She subsequently had charge of the cemetery, with a monthly allowance for its care, and that of the tomb of Hybut Jung at Patna, granted or rather re-allowed by Government of Sa. Rs. 305, with a further annual pension of Sa. Rs. 1,000, which she obtained by personally representing her case to Warren Hastings in Calcutta in 1787. These allowances were continued to her grand-daughters, after her death, and have descended to the heirs of the family, now in charge.

In the east verandah, are the tombs of Mohut-ood-Ulli, and his son (e. and f. Pl. II.), cousins of Sooraj-ood Dowlah, also of another cousin of this Nuwab, by name Mirza Mehndi. (d. Pl. II.)

Many of the records of Khooshbagh having been stolen by a former mookhtyar of the gardens, who fled to the upper provinces with the accumulated arrears of many months' salary belonging to the establishment, it is now difficult to discover, what posts these latter named individuals held, nor do their names appear in History.

At the western extremity of the mausoleum garden, stands the small neatly built mosque and fountain frequented by the Moollahs of the cemetery at the prescribed hours for prayer.

The third enclosure (*vide* Plate I.) contains a tank on the borders of which, stands a little dwelling house (9) called the Bythuk Khanah,

* Married afterwards to Watijud-ally Khan, son of Ahbud Ali Khan.

† Married afterwards to the Nuwab Syud Ahmud Khan Bahadoor Hosear Jung, son of Nuwab Syud Mahomed Khan Bahadoor Shair Jung.

‡ Married to Meerza Mahomed son of Meerza Mahomed Ali.



STUCCO HEAD, EXHIBITED BY MAJOR BAKER.

Black, Asinhi, Lith. Press & Hare St Calcutta.

inhabited by the Moonshi and other servants of the tombs. Here is also the Mussafir Khanah or resting place of travellers, (h. Pl. I.) where also many faqueers and pilgrims are fed at certain times, from the funds of the mausoleum. A fine old deep well may also be seen in this enclosure, but it is no longer used, the water having been polluted many years ago, according to native report, by a faqueer having been accidentally drowned in it, one dark night : since then a parapet wall has been built round it.

The city of Moorshedabad, is said, in former times, to have extended beyond its present limit on the right bank of the river, as far as Khooshbagh. Many palaces, houses and gardens of Nuwabs and nobles then occupied the right bank, which was in those days, the most populous part of the city. Little can now be traced of these buildings amongst the luxuriant and tangled jungle. With the exception of the new palace and a few buildings immediately on the bank of the river, Moorshedabad is now truly a wilderness of ruins and forest.

Khooshbagh with its neatly kept walks, noble trees and parterres of brilliantly-coloured flowers, banishes all sombre thoughts in connection with the object of its establishment. A few hours in this quiet nook where repose the ashes of men, who have played such eventful parts in the history of our empire in the east, might be supposed to afford much interest ; but few Europeans visit the spot, and few even, though resident at the neighbouring station of Berhampore, five miles distant, are aware of its locality !

Notice of two heads found in the Northern : Districts of the Punjab, with drawings, by Mr. W. JACKSON, Vice-President of the Society.

Plates XIX. and XX., are drawings from the two heads mentioned in the Proceedings of October last, as having been exhibited at a meeting of the Society by Major Baker of the Engineers : they are said to have been found near Peshawur ; the two heads are of most opposite characters and the contrast shews to advantage the peculiarities of each.

Plate XIX., is evidently a head of the Boodhistic form ; the hair plaited all over and turned up in a knot at the very top of the head ;—the

eyelids heavy ; the eyes but little open, and sloping upwards towards the ears ; the nose flat and thick ; the mouth large with thick flat lips ; the ears very large and flat, with the lobes drawn down to a hideous extent : the expression of the face stolid and heavy : the material of which this head is composed is a white stucco of a very friable nature ; the workmanship is coarse, and the modelling of the head incorrect.

Plate XX., again is of a superior character in every respect ; the eyes open and intelligent ; the nose well formed ; and the nostrils open and well articulated ; the upper lip short ; the lips well and sharply defined ; and the mouth bearing a pleasing and intellectual expression ; the head too is correctly modelled, shewing some knowledge of the art of sculpture ; the ears are concealed by the full curls of the hair, which hangs loosely on each side of the head, the curls being well and sharply executed ; on the head is a cap or fillet ; the two sides being apparently connected by the principal band which goes round over the forehead ; but the upper part open, allowing the hair to appear and fall over the band just above the forehead ; the sides of the cap are divided into lozenge-shaped projections from the surfaces representing some kind of ornament ; where these sides join the band or fillet, I think some thing has been broken off ; the countenance is handsome and pleasing in its expression, either in profile, or in full face ;—the material is a dark stucco or cement, not so easily broken as that of Plate XIX., and of better and finer ingredients ; indeed the sharpness of the work is surprizing considering its antiquity.

I cannot conjecture without more data what or whom this head No. 2, is designed to represent ; but it is evidently not a Hindu head ; and on comparing it with the heads on the early Bactrian coins, there appears to be a great resemblance in general character ; sufficient to induce me to think it belongs to that period. The expression of the face is somewhat of a Greek cast, but it is not a pure Greek countenance ; if the spot on which it was found is known, I should think that other portions of the building it has belonged to might be discovered ; it is not probable that a single figure should be made of such weak materials ; and from the breakage at the top and back of the head I think it must have been attached to a wall of some building ; this is the more probable from the position of the



STUCCO HEAD EXHIBITED BY MAJOR BAKER.

head which is not erect but turned on one side; and the ornamental work on the left side of the cap, is not found on the right side; the right side was therefore probably concealed.

It is very desirable that further enquiry should be made for a few more fragments, in the spot where this head No. 2, was found; the head in Plate XIX., is common enough; and has evidently no connection with the other.

*Has Sa'dy of Shyráz written Rékhtah verses?—By A. SPRENGER,
Secretary of the Asiatic Society of Bengal.*

It has been asserted in the *Journal Asiatique* IV. Série, Vol. I. p. 1 and Vol. II. p. 361, that the celebrated author of the *Gulistán* (died A. H. 691) has written *Rékhtah* verses. The subject appears to be of sufficient interest to justify the publication of the original passages which bear on it. The assertion rests on a passage in the *Tadzkirah* of Qáyim, which was compiled in A. H. 1168, and is called *مخزن نكات* (the title is a chronogram). But Gurdézy who wrote a *Tadzkiráh* in 1165, that is to say, three years before Qáyim most emphatically contradicts this assertion, which in those days seems to have been popular, and he points out the true author of the verses ascribed to Sa'dy Shyrázy. After these two *Tadzkirahs* had been compiled, Myr Taqyy and Shórish wrote short biographies of *Rékhtah* poets, and both contradict this statement.

Qáyim says:—

طبقه اول اتفاق بعضی از مورخین بر آنست که چون حضرت
شیخ سعدی شیرازی قدس الله روحه در هنگام سیر و سیاحت
بطرف کجرات تشریف آوردند مجاورت سومذات چنانکه در نسخه
بوستان خودش ایمائی بر آن فرموده اند کردند و لختی بر زبان این
دیار وقوف یافته یکدو بیت ریخته که بعد ازین مرقوم خواهد شد
برسبیل تفنن بقید نظم در آورده بعد ازان حضرت امیر بر همان بذاترح
ولغزای بسیار بکار بردند هرچند سلیقه سخن سنجی آنوقت دور
از فصاحت ریخته گویان حال است و از عبارات غیر مانوس مالا مال

لیکن بپاس طبیعت مشتاقان هر جندس سخن دو سه چهار بیت
ازان ابیات تبرکاً و تیمناً درین مقام قلمی میگردد و از آثار و احوال
این هردو بزرگوار چه نویسد که مورخان سلف در کتب تواریخ
متداوله ضبط نموده اند و اظهر من الشمس و ایدین من الامس است
سعدی

ای مردمان شهر شما کتنی بری بهه ریت هی
هی هی نمی پرسد کسی پردیسیا ماریت هی
سعدی طرح انگیخته شهید و شکر آمیخته
در ریخته در ریخته هم شعر هی هم گیت هی

“*First Period.* Some historians agree in the opinion that when the Shaykh Sa'dy Shyrázy in his travels to Gujrát resided at Samnát—he alludes to his stay there in his Bostán—he became slightly acquainted with the language of the country and composed one or two Rékhtah verses, which will be quoted hereafter. Subsequently the Amyr (Khosraw) has in the same manner composed many logogriphs in Rékhtah, but the style of that time is very different from the style of the poets of our age, and there occur many idioms which are no longer in use. But for the sake of those who take an interest in these matters, three or four verses are inserted here. As the biographies of these two great poets occur in well known historical works, there is no need of recording them here.

“*Sa'dy*: O men! what a bad fashion is this in your town, alas no one enquires if a stranger be killed. Sa'dy has given you a verse* and has mixed sugar and honey. He has put pearls into the Rékhtah idiom; and this is a poem as well as a song.”

Fath Aly Khán Hosayny Gurdózy says:

سعدی دکنی از شعرای قرار داده دکن است و آنکه بعضی اعزه را
بسبب اتحاد تخلص مغالطه افتاده ریختههای سعدی دکنی را از عدم

* *Tarh* is a technical term which is used in assemblies of poets (Moshá'arah) and it means the verse which is given, and in the metre and rhyme of which all the members of the Moshá'arah are expected to make verses for their next meeting.

اعتنا وقلت تتبّع بنام سعدی شیرازی مرقوم ساخته اند ناشی
 از جهل و تسفه است و من ادعی فعلیه السند
 همنا تمنکون دل دیا تمنی لیا اور دکہ دیا
 تم یہ کیا ہم وہ کیا ایسی بہلی یہ ریت ہی

“Sa'dy Dakany is one of the poets who lived in the Deccan. The mistake which some persons have made of ascribing the Rékhtah compositions of Sa'dy Dakany to Sa'dy Shyrázy, owing to the identity of the takhalluṣ and their own rashness and want of research, has arisen from ignorance and stupidity. Those who make such an assertion ought to prove it. Specimen of Sa'dy Dakany's poetry : ‘I have given thee my heart, thou hast taken it and hast given me pain in return. Thou hast done this, I have done that, this is a good fashion!’”

The passage in Myr Taqyy runs :

سعدی دکھنی راست و آنچہ بعضی این را شیخ سعدی رحمت اللہ علیہ
 گمان بردہ اند خطا است

همنا تمنکو دل دیا تمنی لیا اور دکہ دیا
 تم یہہ کیا ہم وہ کیا ایسی بہلی یہہ ریت ہی
 دو نین کے کہپر کروں رو رو تجوں دل کو بہروں
 پیدش سگ کویت دھروں پیداسا نجاوے پیت ہی
 سعدی غزل انگلیختہ شیر و شکر آمیختہ
 در ریختہ در ریختہ ہم شعر ہی ہم گیت ہی

“Sa'dy Dakany is the author of the following verses ; they have by some persons been ascribed to the Shaykh Sa'dy, but this is an error : ‘I have given thee my heart, thou hast taken it and hast given me pain in return. Thou hast done this, I have done that, this is a good fashion ! I make cups of my two eyes, crying, crying, I wither away ; I will give full sway to my sentiments, I will place (the two cups) before the dog of thy street that he may not remain thirsty, this is love (or that he may drink). Sa'dy has given you a verse and has mixed sugar and honey. He has put pearls into the Rékhtah idiom, and this is a poem as well as a song.’”

Shórish says :

سعدی نامش معلوم نیست وطنش دکن است ازوست
 همنا نے تمکو دل دیا تمنے لیا اور دکھ دیا
 تم یہہ کیا ہم وہ کیا ایسی بہائی یہہ ریت ہی

“Sa'dy, his name is not known, he was of the Deccan, this verse is by him : I have given thee my heart, &c.” The specimens contained in the three Tadzkirahs appear to be the disjecta membra of one Ghazal.

I leave it for the Reader to judge whether the assertion is borne out that Sa'dy Shyrázy has written Rékhtah poetry. I must however make two remarks ; first, that on comparing the Tadzkirahs of Qáyim and Gurdézy, it does not appear that the former knew the labour of the latter, though Gurdézy wrote three years sooner. Qáyim distinctly denies every knowledge of Gurdézy's Tadzkirah, saying that no Tadzkirah of Rékhtah poets had ever been written ; secondly, that we have only the rough, incomplete copy of Qáyim's Tadzkirah (it is preserved in Moty Ma'hall library at Lucnow) and there is much reason to believe that he never completed it or made a fair copy and published it. Should he have given up the work on finding that Gurdézy had already written a Tadzkirah? At all events it cannot be said that Qáyim intended to contradict the statement of his predecessor ; nor can a book on which the author has not bestowed the last cares, be considered as high an authority as if he had done so.

I take this opportunity of adding some specimens of early Rékhtah poetry. Qáyim says that Amyr Khosraw has written Rékhtah verses, and that he is the author of Rékhtah logogriphs. He quotes two verses and no riddles. I give one of the verses quoted by Qáyim and the whole Ghazal, from which the other verse is taken and some specimens of riddles, though it is certain that nine-tenths of the riddles ascribed to him are of much more recent date.

زحال مسکین مکن تغافل دُرائی نیناں بنائی بتیان
 کہ تاب ہجران ندارم ای جان نلیہو کاہے لگائے چہتیاں
 چو شمع سوزان چو ذرہ حیران ہمیشہ گریان بعشق آن ماہ
 نہ نیند نینان نہ آنگ چینان نہ آپہی آوے نہ بہلیچے بتیان

شبان هجران دراز چون زلف و روز و صلیش چو عمر کوتاه
 سکهی پیا کو جو میس نه دیکهون تو کیسی کاٹوں اندھری رتیاں
 یکایک از دل بصد فریدم به برد چشمش را و تسکین
 کسے پڑی ہی جو جا سناوے پیارے پیو کو ہماری بتیاں
 بحق روز وصال محشر کہ داد مارا فریب خسرو
 درائے راکھوں سمیت ساجن جو کھنی پاؤں دو بول بتیاں
 زرگر پسری چو ماہ پارا کچھ گدھی سنوارے پکارا
 نقد دل من رہو و بشکست آخر نہ گدھا نہ کچھ سنوارا

“Do not neglect the condition of this poor man, turning away your eyes from me and making excuses.

As I am unable to endure the pangs of separation, O beloved! why do you not press me sometimes on your breast?

I burn like a lamp, I am confused like a moth, I am constantly crying out of love for that moon.

No sleep comes into my eyes, nor rest into my body; as neither she comes herself nor sends a letter.

The nights of separation are long like her ringlets, and the days of meeting her are short as life.

O friend (or attendant)! if I do not see my beloved, how shall I spend the dark nights?

Suddenly her eye-has stolen from my heart by a hundred deceits, peace and rest.

Who will be kind enough to report to my beloved what I say?

I swear by the day of resurrection, O Khosraw, that as she has deceived me, I will conceal my beloved in my bosom if I have an opportunity to say two words to her.”

The other verses run—

“The daughter of the goldsmith, who resembles a piece of the moon, when at work making and mending jewelry called me; she has taken away and broken my heart, and in the end she has neither made nor mended it.”

I must not neglect to mention that a translation of the above Ghazal is in Garcin de Tassy's excellent *Histoire de la littérature Hind.* I. p. 301. The following are specimens of Khosraw's riddles transcribed from a MS. of the Tóp-Khánah library at Lucnow.

پہیلی حمد الہی
 سب کوئی اس کو جانے ہی پر ایک نہیں پہچانے ہی
 آٹھ دھڑی میں لیکھا ہی فکر کیا اور دیکھا ہی

Riddle in praise of God. "Every one knows of him but no one is acquainted with him. He who reflects and thinks during the scales (i. e. watches or the 24 hours) has seen him."

پہیلی نعمت میں حضرت رسول صلی اللہ علیہ وسلم کی
 ایک پرکھ ہی دئی سوارا دنیا کا نستارن ہارا
 واکي چرنون لاگ رہو زیادہ بچن نہ مہسے کہو

The Prophet. "There is a man made by God, he is the saviour of the world, remain attached to his feet, and say no more."

خدا کی تعریف میں
 سب سکھین کا پیا پیارا سب میں ہی اور سب سون نیارا
 واکي آن مجھے یہہ بہا جاکی ہی بن دیکھی چا

God. "He is the dearest of friends, he is in all, and distinct from all, his ways I like, and though I have not seen him, I have a longing after him."

پہیلی چراغ کی
 تیلی کا نیل کمار کا ہڈا ہاتی کی سوند نواب کا چھڈا

Lamp. "The oil of the oilman, an earthen-ware vessel of the potter, the trunk of an elephant, the flag of a Nawáb."

پہیلی خربزہ
 دس ناریکا ایک ہی نور بستی باہر واکا گھر
 پیٹھ سخت اور بیدت نرم منہ میٹھا تاثیر گرم

Melon. "Ten women, one man, it lives outside the village, the back is hard, the belly soft, it sweetens the mouth and is warm in its effects."

بهيلي حالخور
 كمائي اپني پھينڪ ڏي اور جي پر نهين ملال
 واسي ڪيون هت جات هيئن جو روزي ڪهائي حال

Sweeper. "He throws away his earnings (i. e. dirt) yet he is not disgusted; why do people avoid him, though he eats his lawful earnings." (The last *miçra* is a play on the word *Halál-Khór* a sweeper.)

Leaving the other riddles which I had copied for a separate article, I will mention another little work of Amyr Khosraw of which no mention is made by Qáyim. This is a *Niçáb* that is to say a rhymed vocabulary in Hindee, Persian and Arabie, intended to be learned by-heart by children. It is commonly called *Kháliq Báriy* from the initial words. The author mentions his name and explains its meaning not in a very clear manner :

مولوي صاحب سرن پناه گدا بهڪهاري خسرو شاه

The vocabulary consists of near 200 verses, and is in various metres, with a view of illustrating them. The following is a specimen :

شرم حيا در هندي لاج حاصل ڪهئي باج خراج
 طالع بخت جو ڪهئي بھاگ لکن سرود ترنم راگ

"Sharm (shame) is the Persian for the Arabie *Hayá* and *láj* is the Hindee; and *háçil*, and *báj* in Persian and *Kharáj* in Arabie are synonymous, and mean public revenue. *Táli* in Arabic, *bakht* in Persian and *bhág* in Hindee mean destiny. *Lahn* and *tarannum* in Arabie, *sarúd* in Persian and *rág* in Hindee mean a tune."

The first Urdú poet after Myr Khosraw whom Qáyim mentions is Núry, a friend of Faydhy and consequently a contemporary of Akbar, he says that he has written only two or three Ghazals in *Rékhtah* and mentions only one verse.

هرکس که خيانت کند البته بترسد
 بپچاره نوري نکرے هي نه دَرے هي

"Every person who acts deceitfully is no doubt afraid. Poor Núry has not done any thing wrong and does not fear."

After Núry follows Mohammad Afdhal in Qáyim's list. It seems however that it was 'Abd Allah Qotobsháh (came to throne of Golconda in A. H. 1020=A. D. 1611) who first patronized and thereby raised *Rékhtah* poetry.

Meteorological Observations kept at the Rangoon Field Hospital, Lat. 16° 47' N. Long. 96° 13' 27" for the Month of May, 1852.
Elevation of the Hospital above the level of the sea about 40 feet; distance from the river about one mile.

Date.			SUNRISE.				9 A. M.				NOON.				
May.	Thermometer.		Barometer.	Force and direction of Wind.	Aspect of Sky.	Thermometer.		Barometer.	Force and direction of Wind.	Aspect of Sky.	Thermometer.		Barometer.	Force and direction of Wind.	Aspect of Sky.
	Wet.	Dry.				Wet.	Dry.				Wet.	Dry.			
	°	°	No instrument.	Calm.	Cir.-strati.	°	°	..	W. light.	Cloudy.	°	°	..	S. W. fresh.	Cumuli.
8th	76	79	Ditto.	Ditto.	Cir.-cumuli.	77	98	..	Calm.	Cirri.	76	96	..	Ditto.	Cirri.
9th	76	79	Ditto.	Ditto.	Cumuli.	75	88	..	S. W. light.	Cumuli.	71½	94½	..	E. do.	Cir.-strati.
10th	74	77	Ditto.	Ditto.	Strati.	78½	87	..	E. do.	Cir.-strati.	79½	91	..	Ditto light.	Ditto.
11th	75	78	Ditto.	Ditto.	Ditto.	76	78	..	S. E. fresh.	Strati.	77	83	..	S. E. do.	Cum.-strati.
12th	77	78	Ditto.	S. light.	Ditto.	75	76	..	Ditto.	Cumuli.	79	83	..	Ditto fresh.	Strati.
13th	78	80	Ditto.	S. E. do.	Cum.-strati.	80	87	..	S. E. light.	Ditto.	78½	84	..	Ditto.	Cum.-strati.
14th	77	79	Ditto.	Ditto.	Cir.-strati.	80	86	..	Ditto.	Ditto.	79	85	..	Ditto.	Ditto.
15th	78	79	Ditto.	Ditto.	Strati.	80	83	..	S. E. light.	Cum.-strati.	79	80	..	Ditto light	Ditto.
16th	73	74	Instrument arrived.	Calm.	Cir.-strati.	76	79	30.	Ditto.	Ditto.	78½	85	30.	Ditto light	Ditto.
17th	76	77	29.96	Ditto.	Cum.-strati.	77	82	30.	S. W. do.	Cir.-strati.	81	89	29.95	S. do.	Rain.
18th	75	76	.95	Ditto.	Cirri.	79	84	29.97	Ditto.	Cumuli.	78	83	29.93	S. W. sqly.	Ditto.
19th	76	77	.94	Ditto.	Hazy.	78	82	.97	Ditto.	Ditto.	79	82	.95	S. fresh.	Ditto.
20th	76	77	.93	S. light.	Cir.-strati.	80	83	.95	S. do.	Ditto.	78	82	.93	W. do.	Ditto.
21st	75	76	.91	S. b. W. do.	Cumuli.	78	83	.93	Ditto.	Ditto.	80	87	.91	S. b. E. lt.	Cumuli.
22nd	75½	76½	.88	W. S. W. do.	Cir.-strati.	77	82½	.92	S. W. do.	Cir.-strati.	80	87½	.90	S. b. W. f.	Ditto.
23rd	75	76	.90	S. do.	Strati.	79½	81½	.92	Ditto.	Cumuli.	80	87	.90	S. W. light.	Strati.
24th	77	77½	.91	N. W. do.	Ditto.	78½	84	.95	N. W. do.	Strati.	80	84	.92	N. W. do.	Cum.-strati.
25th	75	76	.91	Ditto.	Ditto.	77½	79½	.94	Ditto.	Ditto.	79	82	.91	Ditto.	Strati.
26th	76	77	.88	Ditto.	Cir.-strati.	77	78	.90	Ditto.	Cir.-strati.	77	79	.87	Ditto.	Ditto.
27th	76	77	.88	S. E. do.	Strati.	79½	81½	.59	S. E. fresh.	Ditto.	79	87	.87	S. b. W. do.	Cumuli.
28th	76	77	.88	S. b. W. do.	Cum.-strati.	78	82	.93	S. b. W. lt.	Cumuli.	..	..	..	S. W. do.	Cir.-strati.
29th	75	77	.89	Ditto.	Cumuli.	77	80	.94	Ditto.	Ditto.	76	82	.93	S. b. W. do.	Cumuli.
30th	75	77	.91	N. b. E. do.	Cir.-strati.	77	80	.94	Ditto.	Ditto.	79	86	.92	Ditto.	Ditto.
31st	76	77½	.94	S. b. W. do.	Cum.-strati.	77	80	.95	Ditto.	Ditto.	79½	84½	.97	S. E. do.	Ditto.
Total	1818.5	1854.5	448.67			1867.5	1985.0	477.80			1803.5	1965.5	448.86		
Mean	75.770	77.270	29.9113			77.729	82.708	29.862			78.413	85.458	29.924		

Instruments { Wet and dry bulb Thermometer by S. and B. Solomons, 39 Albemarle Street, London.
Common Thermometer by Pirrala, 19 Hatton Garden, London.
Aneroïd Barometer 5117.
Rain-gauge, copper tube with copper float and brass Index rod (patent) No. 87.

Meteorological Observation kept at the Rangoon Field Hospital—(Continued.)

3 P. M.				SUNSET.				9 P. M.				AT NOON.			
Thermometer.		Baro- meter.	Force and direction of Wind.	Aspect of Sky.	Thermometer.		Baro- meter.	Force and direction of Wind.	Aspect of Sky.	Thermometer.		Baro- meter.	Force and direction of Wind.	Aspect of Sky.	Rain gauge over- set in night pro- bably 2 inches of rain lost, on the 11th. Drops of rain and thunder. 2.44 Lightning. 1.54 Ditto. 0.12 Thunder. 0.85 Ditto. 0.44 0.74 0.25 0.0 Thunder. 0.44 0.10 0.30 [Thunder. No rain this 24hs. 2.58 0.80 Thunder. 0.94 1.10 0.22 0.52 0.12 No rain this 24 [hours. No rain this 24 0.72
Wet.	Dry.				Wet.	Dry.				Wet.	Dry.				
° 79	° 95	..	S. E. fresh.	Hazy cum.	° 79	° 87	..	S. W. fresh.	Cumuli.	° 76	° 82	..	S. light.	Clear.	
75	95	..	S. do.	Cirri.	74	86	..	S. light.	Cirri.	75	83	..	Ditto.	Ditto.	
78	86	..	S. E. light.	Strati.	77	85	..	Ditto.	..	77	81	..	S. W. do.	Cumuli.	
77½	88	..	Ditto.	Cumuli.	77	85	..	S. E. light.	Cir.-strati.	75	81	..	S. E. do.	Cloudy.	
80	85	..	Ditto.	Strati.	77	79	..	Ditto.	Strati.	78	81	..	Ditto.	Ditto.	
79	83	..	S. fresh.	Ditto.	79	82	..	S. do.	Cum.-strati.	76	78	..	Ditto.	Ditto.	
79	81	..	N. W. light.	Rain.	77	78	..	S. W. fresh.	Strati.	78	79	..	S. do.	C.-strati.	
74	75	..	Ditto.	Cir.-strati.	74	75	..	N. W. light.	Cir.-strati.	73	74	..	Calm.	Ditto.	
80	88	29.96	S. do.	Strati.	76	78	29.95	S. W. do.	Strati.	76	78	30.	S. light	Ditto.	
76	80	.96	S. W. do.	Ditto.	76	78	.96	S. do.	Ditto.	76	77	29.97	Ditto.	Cirri.	
76	78	.92	Ditto fresh.	Cir.-strati.	74	76	.93	..	Ditto.	75	76	.97	S. W. do.	Strati.	
75½	78	.96	Ditto light.	Cum.-strati.	76	78	.92	S. W. light.	C.-strati.	76	78	.95	Ditto.	Cir.-strati.	
75	77	.90	S. b. E. do.	Strati.	..	..	..	S. W. fresh.	Strati.	77½	78	.93	S. do.	Ditto.	
82½	88	.88	Ditto fresh.	Cum.-strati.	79	84	.88	N. W. light.	Ditto.	77	78½	.91	Calm.	Cirri.	
77½	78½	.86	S. W. sqly.	Hazy (sqlys.)	77	81	.87	N. W. fresh.	Ditto.	75	76	.98	S. W. light.	Strati.	
75	78	.88	Ditto.	Rain.	78	81	.90	W. N.	Ditto.	74½	75½	.90	S. do.	Ditto.	
79½	81½	.88	N. light	Cumuli.	74	75	.91	S. light.	Strati.	..	..	.90	..	..
80½	83	.86	N. W. do.	Ditto.	77	78	.87	..	Rain.	76½	77½	..	N. W. lt.	Cir.-strati	
77½	80	.84	S. do.	Ditto.	77	78½	.85	S. b. W. lt.	Cir.-cumuli.	75	76½	.89	S. W. do.	Strati.	
..	85	.85	Ditto.	Ditto.	77	78½	..	Ditto.	Cum.-strati.	76	77½	.89	Ditto.	Ditto.	
78	83	.85	S. W. fresh.	C.-strati.	77	80	.86	Ditto.	Cumuli.	75½	79	.95	Ditto.	Cir.-cumuli.	
78	83½	.87	Ditto light.	Cumuli.	..	..	..	..	..	77	79	.93	Ditto.	C.-strati.	
79	87	.88	Ditto.	Cir.-strati.	76	78	.90	Ditto.	Rain.	..	..	..	..	..
79	87½	.93	Ditto.	Cum.-strati.	78½	81	.96	S. b. E. lt.	Cumuli.	78	80½	.97	S. b. E. do.	Cumuli.	
1785.0	1913.5	478.28			1686.5	1762.0	388.76			1673.0	1726.0	419.14			13.79
77.608	83.195	29.892			76.659	80.090	29.904			76.045	78.454	29.934			

J. FAYRE, M. D.
Assistant Surgeon, Field Hospital, Rangoon.

NOTE.

The site of the accompanying observations is the Medical officer's (attached to the field Hospital,) quarters ; they are in an open and exposed situation outside the great stockade, and not sheltered by surrounding jungle, that having been all cleared away by the Burmese before we took Rangoon.

The house is built of wood, raised on pile of teak 8 feet high, and the floor about that distance from the ground, which, in the immediate vicinity, is sandy and quickly absorbs the rain. It is about one mile due south of the Dagon Pagoda which, the Engineer officers inform me, is in Lat. $16^{\circ} 47' 56''$ N. Long. $96^{\circ} 13' 27''$ E. about one mile north of the river and raised above it about 40 feet.

Remarks for the Month.

The register was not commenced until the 8th, no instruments until that time being available.

The air during the first 8 days very dry ; evaporation great ; steady land and sea breezes, rendering the heat tolerable. In the evenings dense banks of cloud rising in the south with occasional lightning.

On the 10th a few drops of rain fell followed by a great fall of the temperature ; squalls of wind with thunder during the night, but no rain.

On the 11th more rain fell at noon ; cloudy with lightning at night ; air not so dry and much cooler. Wind varying between S. E. S. W. ; occasional heavy gusts of wind with rain and lightning ; cloudy at night.

12. Rain fell heavily last night, commencing at about 10, accompanied by strong wind, thunder and lightning.

13. Warmer ; a few showers with squalls of rain and wind with distant thunder.

14. Showers occasionally ; wind prevailing from S. E. cool in with fresh breezes and thunder occasionally.

15. Wind in the morning S. E. with light showers ; at about 3 P. M. wind changed suddenly with violent squalls of wind and rain to N. W.

16. Light showers ; close ; occasional squalls.

17. Ditto. 18. Showers occasionally, but very light, cool pleasant weather, but very close when the wind drops.

19. Ditto. 20. Heavy squalls of wind and rain from west.

21. Very cool and fresh, only one slight shower at sunset.

22. No rain ; cloudy with cool breeze before noon ; heavy rain after noon ; violent thunder storms with wind.

23, 24, 25, 26, 27. Much cold ; the former squally with shower of rain ; occasional thunder storms and variable winds.

28, 29, 30, 31. Much the same weather ; wind now steady.

*Hourly Observations commencing at Noon on the 21st May, 1852,
for 24 hours.*

May. 21 Hours.	Thermometer.		Aneroid Barome- ter.	Force and direction of Wind.	Aspect of Sky.	Rain guage and Remarks.
	Wet.	Dry.				
Noon.	80	87	29.91	S. b. E. light.	Cumuli.	Rain guage 0.3 inches.
1 P.M.	78	88	.90	S. E. fresh.	Cumuli-strati.	
2	78	82	.89	S. E. do.	Ditto.	Slight passing shower. 5 Minutes dura- tion. Calm and close. Ditto sultry. Ditto. Ditto.
3	77½	82½	.88	S. b. E. do.	Ditto.	
4	78½	83½	.87	S. do.	Ditto.	
5	78½	88	.88	S. W. light.	Cumuli.	
6	79	82	.88	S. W. rain.	Cumuli-strati.	
7	76½	79	.88	S. W. light.	Cirro-cumuli.	
8	76	78½	.88	S. W. do.	Cirri.	
9	77	78½	.91	Calm.	Ditto.	
10	77	78½	.91	Ditto.	Ditto.	
11	76	78	.91	Ditto.	Ditto.	
12	76	77	.90	Ditto.	Ditto.	
1 A.M.	76	77	.89	S. W. b. light.	Ditto.	No rain regis- tered in this 24 hours.
2	76	77	.88	Ditto do.	Clear over head, Cirri on horizon.	
3	76	76½	.87	W. S. W. do.	Ditto.	
4	75½	76½	.88	S. W. do.	Ditto.	
5	75½	76½	.88	W. S. W. do.	Cirro-strati be- gan from S. W.	
6	75	76½	.89	S. W. do.	Ditto all over day.	
7	76½	77½	.91	Ditto do.	Ditto.	
8	77	79½	.91	Ditto do.	Cumuli-strati.	
9	79	82	.92	Ditto do.	Ditto.	
10	79	85	.92	S. S. W. do.	Ditto.	
11	80	86	.91	Ditto do.	Ditto.	
12	80	87½	.90	S. b. W. fresh.	Cumuli.	
Total,	1933.5	20.0	747.36	4 hours from S. E 1 do. from S. 4 do. from calm. 16 do. from S. W.		
Mean.	77.34	80.40	29.934			

Abstract of Meteorological Observations for May, 1852.

Rangoon, June 1st, 1852.

Thermometer Sunrise.	Thermometer 9 A. M.			Thermometer Noon.			Thermometer 3 P. M.			Thermometer Sunset.			Thermometer 9 P. M.			Remarks.
	Maximum.	Minimum.	Min. of daily observation.	Maximum.	Minimum.	Min. of daily observation.	Maximum.	Minimum.	Min. of daily observation.	Maximum.	Minimum.	Min. of daily observation.	Maximum.	Minimum.	Min. of daily observation.	
Wet bulb.	78.73	75.313	80	0	71½	73.413	80½	74	77.587	79	0	76.64	78	73	76.046	Quantity of rain registered in pluviometer 11.79 inches, about 2 inches lost by oversetting of pluviometer on the 12th; prevailing winds in the latter part of the month S. and S. W.; in the early part unsteady, occasionally from the N. E. and N. W. Several heavy squalls of wind with rain, thunder and lightning at night. Since the first shower fell, the air has been much cooler.
Dry.	80.74	77.270	88	76	82.292	96	82	85.5	95	75	83.195	87	74	78.459		
Barometer. Sunrise.	Barometer 9 A. M.			Barometer Noon.			Barometer 3 P. M.			Barometer Sunset.			Barometer 9 P. M.			
	Maximum.	Minimum.	Min. of daily observation.	Maximum.	Minimum.	Min. of daily observation.	Maximum.	Minimum.	Min. of daily observation.	Maximum.	Minimum.	Min. of daily observation.	Maximum.	Minimum.	Min. of daily observation.	
	29.96	28.88	29.9113	30	29.89	29.944	30	29.87	29.924	29.96	29.84	29.893	29.96	29.85	29.904	29.934

The Register of which this is an Abstract was commenced on the 8th May.

J. FAYRER, M. D.
Assistant Surgeon, Field Hospital, Rangoon.

SUNRISE.				9 A. M.				Noon.							
Thermometer.		Baro- meter.	Force and direction of Wind.	Aspect of Sky.	Thermometer.		Baro- meter.	Force and direction of Wind.	Aspect of Sky.	Thermometer.		Baro- meter.	Force and direction of Wind.	Aspect of Sky.	
Wet.	Dry.				Wet.	Dry.				Wet.	Dry.				
1st	78	79	29.97	S. b. W. lt.	Cirro-strati.	79½	83	30.	S. W. light.	Cumulo-strati.	79	89	30.	S. W. light.	Clo. strati.
2nd	77	78½	.97	Ditto.	Cirri.	80	83	30.	Ditto.	Ditto.	79	87	29.98	Ditto.	Cumuli.
3rd	76½	78	.98	Ditto.	Ditto.	79½	84	29.95	Ditto.	Cumuli.	80	90	.92	Ditto.	Ditto.
4th	77	78	.89	N. b. W. lt.	Cirro-strati.	79	81½	.93	Ditto.	Ditto.	80	88	.92	W. b. S. f.	Ditto.
5th	77	79	.93	S. W. light.	Ditto.	79½	84½	.94	Ditto.	Ditto.	80	88	.92	Ditto.	Ditto.
6th	77	79	.92	Ditto.	Cirro-cumuli.	80	86	.97	Ditto.	Ditto.	80	87½	.94	S. W. light.	Ditto.
7th	77	79	.92	Ditto.	Cirro-strati.	80	83	.94	Ditto.	Ditto.	75	81½	.92	W. light.	Rain.
8th	77½	78½	.91	Ditto.	Ditto.	79	81½	.95	Ditto.	Ditto.	78½	82	.93	S. W. fresh.	Ditto.
9th	75	76½	.92	Ditto.	Ditto.	79	81½	.95	N. E. light.	Cumulo-strati.	79½	83	.93	S. W. light.	Clo. strati.
10th	77½	78½	.92	Ditto.	Ditto sultry.	80½	83	.94	Ditto.	Ditto.	80	83	.93	S. E. ditto.	Cumuli.
11th	79	80	.93	Ditto.	Cumuli.	78½	82	.94	S. light.	Ditto.	80	83	.94	Ditto	Ditto.
12th	77	78½	.91	Ditto.	Cumulo-strati.	79½	81½	.97	S. W. light.	Strati.	77	82	.94	S. W. light.	Clo. strati.
13th	77	78	.93	Ditto.	Strati light rain.	78½	81½	.96	Ditto.	Cumuli.	79	82	.96	S. b. W. do.	Ditto.
14th	76	77½	.95	Ditto.	Cirro-strati.	78½	81½	.96	Ditto.	Cirro-strati.	80	84	.92	S. E. do.	Ditto.
15th	78	79	.93	Ditto.	Dense cl. hazy.	77	80½	.92	S. E. fresh.	Strain&squally.	80	84½	.92	S. light.	Cumuli.
16th	78	79	.90	Ditto.	Cirro-strati.	77	79	.92	S. light.	Rain.	79	83	.93	S. W. ditto.	Ditto.
17th	77	78	.91	S. E. light.	Ditto.	78	78½	.95	S. W. light.	Cumuli.	79½	83½	.94	Ditto.	Ditto.
18th	78	79½	.93	Ditto.	Rain.	76	78	.96	Ditto.	Ditto.	80½	83	.91	S. W. fresh	Rain.
19th	77½	79	.91	S. W. light.	Cumuli sultry.	80	80½	.91	Ditto.	Ditto.	79	81	.92	S. W. light.	Ditto.
20th	77	78	.89	Ditto.	Ditto†	79	79	.93	S. E. fresh	Cumulo-strati.	75½	77	.90	S. W. fresh.	Cirro-strati.
21st	76	77	.88	Ditto.	Cirro-strati.	78	79½	.93	S. W. light.	Ditto.	78	81½	.91	S. W. light.	Cumuli.
22nd	74½	75½	.94	Ditto.	Ditto.	77	79½	.93	Ditto.	Ditto.	77½	79½	.93	Ditto.	Ditto.
23rd	75	76	.94	Ditto.	Strati.	75	77	.95	Ditto.	Ditto.	79½	83	.94	Ditto.	Ditto.
24th	*	*	.95	S. b. W. lt.	.....	77	78	.96	Ditto.	Ditto.	79½	83	.94	Ditto.	Ditto.
25th	74	75	.95	S. b. W. lt.	Cirro-strati.	77	79½	.95	S. b. W. lt.	Ditto.	78	82	.95	Ditto.	Ditto.
26th	76	77	.94	S. W. light.	Ditto.	77	79½	.95	Ditto.	Cumuli.	77	80½	.95	S. W. fresh.	Ditto.
27th	76½	77	.95	S. b. W. lt.	Cirro-cumuli†	78	80½	.97	S. W. fresh.	Ditto.	79	82	.96	S. b. E. do.	Ditto.
28th	74½	75½	.98	N. E.	Calm-st. rain & thunder in night.	*	*		..	....	74½	76	.99	S. W. light.	Rain.
29th	75½	76½	.95	Ditto.	Ditto.	76	76½	30.02	Calm.	Cirro-strati.	78	80	.96	S. E. fresh.	Ditto.
30th	76½	77½	.97	Ditto.	Cumulo-strati.	78	79½	29.96	S. b. E. lt.	Cumuli.	80	83	.96	W. fresh.	Cumuli.
Total.	2222.5	2257.5	868.02			2271.0	2333.5	868.62			2362.0	2492.5	898.13		
Mean.	76.637	77.844	29.932			78.310	80.465	29.952			78.733	83.083	29.937		

* No observation.

† Heavy rain during night.

‡ Light rain and thunder at night.

3 P. M.				SUNSET.				9 P. M.			
Thermometer.		Force and direction of Wind.	Aspect of Sky.	Thermometer.		Force and direction of Wind.	Aspect of Sky.	Thermometer.		Force and direction of Wind.	Aspect of Wind.
Wet.	Dry.	Baro-meter.		Wet.	Dry.	Baro-meter.		Wet.	Dry.	Baro-meter.	
80½	87½	29.97	Cumuli.	79½	82½	29.90	Cumuli.	*	83	29.90	Cumuli.
80	90½	.97	Ditto.	81	86½	.90	S. b. W. lt.	79	83	S. W.	..
80	80	.88	S. W. fresh.	80	85	.89	Ditto.	*	82	S. W. lt.	..
80½	89	.87	W. light.	78½	85	.88	S. W. lt.	78	82½	Ditto.	Cir.-cumuli.
80	90½	.87	W. ditto.	76½	81½	.89	S. W. lt.	79½	82½	Ditto.	Cir.-strati.
*	*		[since noon.	*	*		..	76	78	Ditto.	Cumuli.
75	77	.80	Rainy.sqly.	77	78	.89	S. W. lt.	76	78	Ditto.	Cir.-strati.
75	76½	.91	Ditto.	75½	77½	.92	S. b. W. lt.	76	79	Ditto.	Ditto.
77½	82	.90	Cum.-strati.	77	79	.88	S. W. do.	76	79	Ditto.	..
78½	85	.90	Cumuli.	*	*		..	76	79	Ditto.	..
77½	84	.90	[since noon.	78½	81½	.94	S. W. lt.	77	78½	29.94	..
77½	84	.99	Do.hy.shwr.	..	..	..	..	77	78½	.94	Cir.-strati.
78½	79	.89	Ditto.	..	..	..	..	76½	78	.97	Cumuli.
78½	79	.93	Ditto.	*	*		..	77	78	.97	Strati.
79½	83½	.99	Ditto.	79	81½	.88	S. W. lt.	78	80	.90	Ditto.
77	78½	.97	Ditto.	*	*		..	79	80½	.93	Ditto.
78½	85½	.90	Ditto.	78½	82½	.90	S. W. lt.	78½	81	.93	Ditto.
80½	85	.90	Ditto.	78	81	.91	Ditto.	78	79½	.93	Do.lightning
78½	82½	.89	Ditto.	79	80	.90	Ditto.	77	78½	.92	Ditto.
*	*		Ditto.	77½	79	.90	Ditto.	77	78½	.90	Cir.-strati.
77½	80	.89	Ditto.	..	..	..	..	76	77½	.90	..
77	77	.88	Rain.	..	..	..	..	*	77½	.90	W. light.
*	*		..	*	*		..	77½	78½	.90	S. W. do.
79	89½	.91	S. W. fresh	76	77½	.94	S. W. lt.	77½	78½	.90	Ditto.
75½	76	.91	Ditto.	74	77	.93	Ditto.	76½	77½	.96	Ditto.
78	79	.90	Ditto.	73½	74½	.96	Ditto.	75½	76	.95	W. do.
77	81	.91	Ditto.	74	75½	.96	Ditto.	77	78	.97	S. W. do.
74½	76	.98	Ditto.	..	..	..	..	75	76	.99	Ditto.
77½	79	.95	Cum. sqly.	*	*		..	75½	77	.98	Ditto.
75½	76½	.94	Rain. sqly.	75	76	.96	W. b. S. f.	74	75	.98	Ditto.
2104.5	2221.5	807.70		1468.0	1521.0	568.33		1997.5	1964.0	778.37	
77.933	82.277	29.911		77.263	80.052	29.912		76.807	78.577	29.937	

* No observation.

I. FAYRE D.

[30 June, 0.74
June 30 to 1.56
Up to noon of From noon of
of 0.54
1.56
16.43 sunrise of
July 1st.

Inches of rain.

0.03

0.25 { Thunder
1.22 { at inter-
0.50 { valsiaday.

0.27 { Few drops
0.10 { of rain in
.. { morning.

NOTE.

The first ten days of the month have been fine, but little rain, and that in showers attended occasionally by squalls of wind with thunder. Weather close and sultry at times; the air damp, Thermometers indicating but little difference between the wet and dry bulbs.

The prevailing winds have been from the S. W. and the sky nearly always overcast with dense clouds.

During the middle and latter part of the month it has been much the same. The air damp, the sky cloudy, and the wind prevailing in the S. W. Frequent heavy squalls, at time accompanied by thunder and heavy shower, but of short duration.

The quantity of rain registered by the copper-tube rain-guage with a graduated (to tenths) brass index rod, is 16.43. The Barometer is placed in an open exposed situation and beyond the influence of trees, houses, walls, or other shelter. The Barometer is an Aneroid, No. 5117, which has been compared in Calcutta with the standard Barometer, but some are inclined to think its range now is rather too high. The Thermometers used are all by good makers, and several in number.

J. FAYRER, M. D.

Assistant Surgeon, Field Hospital, Rangoon.

Hourly observations commencing at 6 A. M. on 21st June, 1852.

Field Hospital Rangoon.

June.	Thermometer.		Aneroid Barome- ter.	Force and direction of wind.	Aspect of sky.	Rain guage.
21.	Wet.	Dry.				
6 A. M.	76	77	29.88	S. W. Lt.	Cirro-strati.	
7	76	77½	29.90	Ditto do.	Cumulo-strati.	
8	77½	79	29.92	Ditto do.	Ditto do.	Very light rain.
9	78	79½	29.93	S. E. fresh.	Ditto do.	Drops of rain.
10	77	78	29.92	S. do.	Ditto do.	
11	76½	78½	29.93	Ditto do.	Ditto do.	
12 Noon.	75½	77	29.90	S. W. do.	Ditto do.	Since yesterday at noon, 0.16 inches rain in guage.
1	76	77	29.90	S. W. Lt.	Strati—rain.	Light rain.
2	76½	78½	29.89	Ditto do.	Cumulo-strati.	Fair.
3	77½	80	29.87	Ditto do.	Cirro-strati.	Ditto.
4	77½	80½	29.86	Ditto do.	Strati.	Lt. rain.
5	76½	78½	29.86	Ditto do.	Cumuli.	Fair.
6	76	78	29.87	Ditto do.	Cirro-cumuli.	Ditto.
7	76	78	29.89	Ditto do.	Ditto do.	Ditto.
8	76	78	29.89	Ditto do.	Ditto do.	Ditto.
9	76	78	29.90	Ditto do.	Ditto do.	Ditto.
10	77	78	29.90	Ditto do.	Ditto do.	Ditto.
11	77	79	29.91	Ditto do.	Clear.	Ditto few cirri on horizon.
12	77½	79	29.91	Ditto do.	Cumulo-strati.	Few drops of rain falling.
1	75	78½	29.88	S. F.	Strati.	Heavy shower.
2	75½	76	29.87	S. W. Lt.	Ditto.	Gentle light rain.
3	75½	76	29.87	Ditto do.	Cumulo-strati.	Ditto.
4	75	76	29.87	Ditto do.	Strati—rain.	Ditto.
5	75	76	29.88	S. E. do.	Cumulo-strati.	Since noon of yesterday in guage 0.6 inches of rain.
6 A. M. 22nd	75	76	29.89	S. do.	Ditto—rain.	
Total,	1907.0	1947.5	747.29			
Mean,	76.28	77.9	29.8916			

J. FAYRER, M. D.
Field Hospital.

Abstract of Meteorological Observations for June, 1852.

Rangoon, July 1st, 1852.

Thermometer Sunrise.			Thermometer 9 A. M.			Thermometer Noon.			Thermometer 3 P. M.			Thermometer Sunset.			Thermometer 9 P. M.			Remarks.
Maximum.	Minimum.	Mean of daily observation.	Maximum.	Minimum.	Mean of daily observation.	Maximum.	Minimum.	Mean of daily observation.	Maximum.	Minimum.	Mean of daily observation.	Maximum.	Minimum.	Mean of daily observation.	Maximum.	Minimum.	Mean of daily observation.	
29.98	29.88	29.932	30.02	29.91	29.952	30	29.91	29.937	29.98	29.87	29.907	29.96	29.88	29.901	29.98	29.80	29.954	Quantity of rain up to Sunrise of July 1st 16.43. Prevailing winds S. W. First ten days of month fine, rain in showers, occasional squalls with thunder. Weather close and sultry at times, and the air damp. Sky cloudy. During the middle and latter parts of the month, sky cloudy and temperature cool; air damp; wind prevailing from S. W.; latterly very squally in the afternoon, and nights, attended by thunder, violent gusts of wind and heavy showers of rain, though of short duration.
Wet bulb.	79	76.758	80.75	80.74.5	78.666	80	78.413	78.666	80.5	74.5	77.915	81	73.5	77.263	79.5	74	76.860	
Dry.	80	77.839	84.76.5	81.189	83.02	90.76	90.76	83.02	90.5	76	82.277	86.5	74	80.052	83	75	78.560	
Barometer Sunrise.			Barometer 9 A. M.			Barometer Noon.			Barometer 3 P. M.			Barometer Sunset.			Barometer 9 P. M.			
Maximum.	Minimum.	Mean of daily observation.	Maximum.	Minimum.	Mean of daily observation.	Maximum.	Minimum.	Mean of daily observation.	Maximum.	Minimum.	Mean of daily observation.	Maximum.	Minimum.	Mean of daily observation.	Maximum.	Minimum.	Mean of daily observation.	

J. FAYRER, M. D.
Assistant Surgeon, Field Hospital, Rangoon.

July.	AT SUNRISE.				AT 9 A. M.				AT NOON.			
	Thermometer.		Force and direction of Wind.	Aspect of Sky.	Thermometer.		Force and direction of Wind.	Aspect of Sky.	Thermometer.		Force and direction of Wind.	Aspect of Sky.
	Wet Bulb.	Dry Bulb.			Wet Bulb.	Dry Bulb.			Wet Bulb.	Dry Bulb.		
1	75	75.5	N. E. light.	Cirro-strati.	77	80	N. E. lt.	Cirri.	76	77.5	S. W. light.	Strati.
2	74	75.5	S. W. do.	Cirro-cumuli.	76	77.5	S. W. do.	Cirro-cumuli.	79.5	83.5	Ditto.	Cumuli.
3	74.5	75	Ditto.	Ditto.	76.5	78.5	Ditto fresh.	Cumuli.	78	81	Ditto fresh.	Ditto.
4	74.5	75.5	Ditto.	Cumuli.	78	80.5	Ditto light.	Ditto.	78	80	Ditto light.	Rain.
5	74.5	75.5	Ditto.	Cumulo-strati.	77	79	Ditto.	Cirro-strati.	78	80	Ditto.	Cum.-strati.
6	75	75.5	Do. fresh.	Ditto.	77	79	Ditto.	....	77.5	79	W. b. S. do.	Strati.
7	77	77.5	Do. light.	Cumuli.	78	80.5	Ditto fresh.	Cumuli.	78	80	S. W. fresh.	Cumuli.
8	75	75.5	Ditto.	Strati rain.	77	77	Ditto.	Cirro-strati.	78.5	79	S. W. light.	Strati.
9	74	74	Ditto.	Cumuli.	75	76	S. E. light.	Ditto.	79.5	82.5	S. E. do.	Cumuli.
10	74.5	75.5	S. E. do.	Ditto.	78	78.5	Ditto.	Cumulo-strati.	78	85.5	S. fresh.	Ditto strati.
11	79	79.5	N. do.	Hazy.	79.5	82.5	S. W. do.	Cumuli.	80	84	S. steady.	Cumuli.
12	78	79	S. E. do.	Ditto.	79	82	Ditto.	Ditto.	80	86	S. W. do.	Ditto.
13	78	79.5	S. W. do.	Cumuli.	79.5	81.5	Ditto.	Ditto.	*	*	..	..
14	78.5	79.5	S. E. do.	Ditto.	77	79	Ditto.	Ditto showers.	..	..	S. W. light.	Cumuli.
15	75	76.5	S. E. do.	Cumulo-strati.	75	78	S. b. E. do.	Cirro-strati.	85	85	Ditto.	Ditto.
16	75	76	S. E. do.	Cumuli.	75	81.5	Ditto.	Cumuli.	79.5	81.5	..	..
17	77.5	78	S. W. do.	Cumulo-strati.	79	80.5	Ditto.	Ditto.	*	*	..	..
18	78	79	S. do.	Cumuli.	79	81	N. W. lt.	Ditto.	81.5	87.5	Ditto.	Ditto.
19	76	79.5	S. W. do.	Hazy.	79	82.5	N. W. do.	Ditto.	80.5	87	W. b. N. lt.	Ditto.
20	79	81	W. do.	Cumuli.	79.5	84.5	S. do.	Ditto.	80	88.5	S. W. do.	Ditto.
21	79	80.5	Calm.	Hazy.	77	80.5	S. b. W. f.	Cirro-strati.	79.5	87.5	Ditto.	Ditto.
22	75	75	S. W. light.	Rain.	77	80.5	..	....	75.5	77	Ditto.	Rain.
23	*	*	..	....	77	80.5	N. E. lt.	Cumuli.	78.5	81	East.	Cumuli.
24	75	76	N. W. light.	Cumulo-strati.	77	79	Ditto.	Ditto.	79	83	W. b. N. do.	Ditto.
25	77.5	79	W. b. N. do.	Ditto.	79	81	Calm.	Cirro-strati.	*	*	..	[showers.
26	76	79	Ditto.	Cirro-strati.	78.5	80	S. W. light.	Strati rain.	78.5	79	S. W. light.	Cirro-strati
27	75	76	W. b. S.	Strati rain.	75.5	76	Ditto.	Cirro-strati.	74.5	76	S. W. do.	Rain.
28	*	*	..	....	78	80	Ditto.	Ditto.	78	79	Ditto.	Strati.
29	75	76	S. b. E.	Cumulo-strati.	77	79	Ditto.	Ditto.	76	78	Ditto fresh.	Rain.
30	74.5	75	S. W.	Ditto.	76.5	78	Ditto.	Cumuli.	78	83	Ditto light.	Cumuli.
31	*	*	..	....	75	76.5	Ditto.	Ditto.	77	80.5	Ditto.	Ditto.
Total.	2129.0	2159.0			2398.5	2469.5	N. S. b. W.		2117.0	2211.0		Rain.
Mean.	76.035	77.107			77.370	79.661	S. W.		78.407	80.188		Hazy.

* No observation.

Meteorological Register kept at the Field Hospital at Rangoon—(Continued.)

AT 3 P. M.				AT SUNSET.				AT 9 P. M.				Remarks.	Date.			
Thermometer.		Force and direction of Wind.	Aspect of Sky.	Thermometer.		Force and direction of Wind.	Aspect of Sky.	Thermometer.		Force and direction of Wind.	Aspect of Sky.			Rain Gauge.		
Wet Bulb.	Dry Bulb.	Barometer.		Wet Bulb.	Dry Bulb.	Barometer.		Wet Bulb.	Dry Bulb.	Barometer.						
78	81	29.92	S. W. lt.	Cumuli.	75	77	29.94	S. W. lt.	Cir.-cumuli.	75.5	77	29.96	S. W. lt.	Cir.-cumuli	1.14	1
79	84.5	.92	Ditto.	Ditto.	76	76.5	.94	Ditto.	Cumuli.	76.5	77	.96	S. do.	Clo. strati.	.20	2
76.5	81.5	.93	Fresh.	Ditto.	77.5	80	.93	Ditto.	Ditto.	76.5	79	.96	S. W. do.	Cir.-cumuli	.32	3
*					*					76.5	77.5	.93	Ditto.	Cumuli.	.04	4
76.5	78	.90	W. N. W. f.	Strati rain.	76	77	.89	W. b. S. lt.	Rain.	77	77.5	.90	Ditto.	Ditto.	.25	5
80	82	.85	W. light.	Ditto.	77.5	78.5	.84	S. W. do.	Cumuli.	*					.52	6
78	81	.82	S. W. f.	Cumuli.	76	77	.84	Ditto.	Cir.-strati.	75	76.5	.84	Do. fresh.	Strati.	.34	7
79.5	82	.85	Ditto.	Ditto.	76	77	.86	S. W. sqly.	Strati.	75	75.5	.87	Do. light.	Ditto.	.58	8
79	82.5	.87	S. do.	Ditto.	79	80	.88	S. b. E. lt.	Ditto.	74.5	75.5	.92	S. E. fresh.	Rain.	2.82	9
81	85	.93	Ditto light.	Ditto.	79.5	81.5	.95	S. b. W. do.	Cumuli.	79	80.5	.97	S. do.	Cumuli.	2.30	10
80.5	85	.95	Ditto.	Ditto.	78.5	81.5	.95	W. by S.	Rain.	77	79	.96	S. light.	Strati.	None.	11
79.5	83.5	.93	S. W. do.	Ditto.	*			squally.		79	81.5	.97	S. E. do.	Cumuli.	1.30	12
*					**	78				**					.04	13
79.5	79.5	.96	Ditto.	Do. shower.	**	78	.97	S. W. lt.	Rain.	**	76.5	30.	S. E. do.	Cumuli.	.30	14
76	76.5	.95	Ditto.	Rain.	**					75	76	29.96	S. W. do.	Rain.	.40	15
79	79.5	.94	Ditto.	Cumuli.	78.5	80	.96	S. W. lt.	Cumuli.	75	76	.97	Ditto.	Cumuli.	.52	16
83	84.5	.94	Ditto.	Ditto.	**					78	79	.97	Calm.	Cirro-strati.	.08	17
80	89	.95	Ditto.	Ditto.	**					77	82	.97	S. W. lt.	Cumuli.	**	18
81	89	.96	W. b. N. lt.	Ditto.	**					77	81	.98	Ditto.	Ditto.	None.	19
80	87	.97	S. W. do.	Ditto.	*					77	81	30.	Ditto.	Cirro-strati.	Ditto.	20
79	83.5	.97	Ditto.	Ditto.	78.5	80.5	.98	S. b. E. lt.	Cumuli.	78.5	80.5	30.	Ditto.	Ditto.	.48	21
77	79	.97	Ditto.	Strati.	74	75.5	.98	S. W. do.	Strati.	75	76	30.02	Ditto.	Ditto.	.64	22
79	83	.98	S. E. lt.	Cumuli.	77	78.5	.98	Ditto.	Cumuli.	76	77.5	30.02	N. E. lt.	Ditto.	.90	23
79.5	84.5	.97	W. b. N. do.	Ditto.	**					77	78.5	30.02	Ditto.	Ditto.	1.02	24
79	87	.96	N. W. f.	Ditto.	**					77	78.5	30.	Ditto.	Ditto.	.04	25
75.5	76	.93	S. W. lt.	Strati.	**					76	77	29.95	S. W. lt.	Ditto.	**	26
77	78	.91	Ditto.	Ditto.	*					76	77	.94	Ditto.	Ditto.	.40	27
74.5	76	.93	Ditto.	Ditto.	**					**					2.24	28
75.5	76	.93	Ditto.	Ditto.	**					74	75	.96	Ditto.	Culo. strati.	1.06	29
74.5	75.5	.93	N. W. lt.	Ditto.	**	75	.95	W. b. N.	Rain.	75	76	.97	Ditto.	Rain.	.74	30
77	85	.90	S. W. f.	Cum.-strati.	*					**					.86	31
2271.5	2374.5	867.92			1847.0	1883.5	718.61			2279.5	2337.5	897.95			21.5	
81	870	90.098			75	808	90.067			75	808	90.031			0.87	

NOTE.

The weather during the early part of this month has been for the most part fine, especially during the day time. The prevailing winds have been S. W. with occasional heavy squalls accompanied by rain.

The atmosphere cool and damp, evaporation very slight—the quantity of rain fallen up to the 15th a little more than 11 inches, the heaviest falls on the 9th 10th, and 12th.

The latter part of the month rather wetter; wind prevailing from S. W. shifting occasionally to the N. and N. E. The rain has fallen more during the day time than in the early part of the month.

The maximum temperature at any time has been 89° Farht. but generally very much lower; the rain has for the most part fallen in showers.

J. FAYRER.

*Hourly Observations commencing at sunrise on the 21st of July, for
24 hours.*

July.	Thermometer.		Aneroid Barome- ter.	Force and direction of wind.	Aspect of sky.	Rain guage.	Remarks.
21.	Wet.	Dry.					
Sun- rise.	79.	80.5	29.97	Calm.	Cumulo-strati.	.48	Close & sultry.
7	79.	81.	.98	S. W. light.	Cumuli.	in guage	
8	79.5	82.	.99	Ditto do.	Ditto	at sun-	Gentle shower, just finished.
9	77.	80.5	30.	Ditto fresh.	Cumulo-strati.	rise fell yester- day.	
10	79.	83.	29.98	Ditto do.	Scattered cum. strati.		Air clear.
11	77.	81.5	.97	Ditto light.	Cumuli.		Sky overcast with dense Cumuli.
Noon.	79.5	81.5	.97	Ditto do.	Ditto.		
1	77.5	82.	.97	Ditto do.	Ditto.		
2	77.5	82.5	.96	Ditto do.	Ditto.		
3	79.	83.5	.96	Do. freshing	Ditto.		
4	79.	84.	.94	South do.	Strati.		
5	78.	81.	.95	S. by E. lt.	Cumulo-strati.		
6	79.5	80.5	.96	Ditto do.	Ditto.		
7	78.5	80.5	.98	S. by W. do.	Cumuli.		
8	78.5	80.5	.99	S. by E. do.	Ditto.		
9	78.5	80.5	30.	S. by W. do.	Cirro-cumuli.		Sky less over- caste
10	78.5	80.5	30.01	South lt.	Ditto.		Hazy about horizon and no rain.
11	77.	80.	.01	Ditto do.	Ditto.		Ditto.
12	78.	80.	.00	S. by W. do.	Ditto.		Ditto.
1	77.	79.	29.93	S. W. do.	Ditto.		Ditto.
2	77.	79.	.96	Ditto do.	Cumuli.		Hazy, clearing off.
3	77.5	79.	.95	Ditto do.	Ditto.		Ditto.
4	74.5	75.5	.97	Ditto squall with a light shower.	Ditto.		Raining gent- ly.
5	75.5	75.	.96	Ditto lt.	Strati & rain.		Ditto.
6 A.M.	75.	75.	.96	Ditto do.	Ditto.	.64	Ditto.
Total,	1946.0	2008.0	749.37			0.64	
Mean.	77.84	80.32	29.9748				J. FAYRER.

Abstract of Meteorological Observations for July, 1852.

Rangoon, August 1st, 1852.

Thermometer Sunrise.			Thermometer 9 A. M.			Thermometer Noon.			Thermometer 3 P. M.			Thermometer Sunset.			Thermometer 9 P. M.			Remarks.
Maximum.	Minimum.	Min. of preceding observation.	Maximum.	Minimum.	Min. of preceding observation.	Maximum.	Minimum.	Min. of preceding observation.	Maximum.	Minimum.	Min. of preceding observation.	Maximum.	Minimum.	Min. of preceding observation.	Maximum.	Minimum.	Min. of preceding observation.	
84.5	79.5	75.0	84.5	79.5	75.0	88.5	81.5	79.5	81.5	79.5	75.0	81.5	79.5	75.0	81.5	79.5	75.0	Quantity of rain during the whole month 21.35 inches. The weather during the early part of the month, fine, especially during the day time. Wind generally from S. W. with occasional squalls and showers. Air cool, but very damp. On several days so little rain fell as not to be appreciable in the gauge. The heaviest falls were on the 9th, 10th and 12th. The latter part of the month wetter; prevailing winds still S. W. but shifting occasionally to N. and N. E. Rain has fallen more during the day time than in the early part of the month.
Wet bulb.	79.74	76.5	77.25	75.0	78.5	75.5	77.5	83	74.5	78.75	73.5	76.5	79.74	76.50	75	78.25	78.5	
Dry.	81.75	78	80.25	76	80.25	77.5	83	89	75.5	82.25	75	78.25	82	75	78.5			
Barometer Sunrise.			Barometer 9 A. M.			Barometer Noon.			Barometer 3 P. M.			Barometer Sunset.			Barometer 9 P. M.			
Maximum.	Minimum.	Min. of preceding observation.	Maximum.	Minimum.	Min. of preceding observation.	Maximum.	Minimum.	Min. of preceding observation.	Maximum.	Minimum.	Min. of preceding observation.	Maximum.	Minimum.	Min. of preceding observation.	Maximum.	Minimum.	Min. of preceding observation.	
30.03	29.86	29.940	30.03	29.940	29.915	29.83	29.915	29.98	29.82	29.90	29.98	29.84	29.91	30.02	29.84	29.93		
30	29.83	29.915																

J. FAYRER, M. D.
 Assistant Surgeon, Field Hospital, Rangoon.

Literary Intelligence.

In Bombay the following works have been lithographed :

A new edition of the *Rawdhat as-Safá* in one volume folio and much clearer than the edition in two volumes which was published in 1261.

Dywáne *Háfítz*, 8vo. 439 pp. A. II. 1267. This is the third or fourth edition published at Bombay and the text differs both from the Bombay 4to. edition of 1244, and from the Calcutta 4to. edition. It is very elegantly written but not very correct.

The *Khamsah* of Nitzámy small folio, 1265. This edition is not correct. It comprises the *Iqbál-námah* Iskandary which is also called the *Sekandar-námah* Barry but not the *Khirad-námah* which is also called the *Iskandar-námah* Bahry and which in fact is rarely met with. The latter is being published in the *Bibliotheca Indica*, the first half is out and the second half is in progress. The *Khamsah* has also been lithographed at Teherán.

A new edition of the complete works of Sa'dy in 4to. It is superior to the folio edition of 1296, but much inferior to Mr. Harington's edition. Another edition has been lately made at Dilly.

Of the *Mathnawý* of Jalál aldyn Rumíy two new editions have been made both in 8vo. one is written in *Naskhta'lyq* 1267 and the other in *Naskhy*. The former is said to be more correct.

Hamlahe Haydary or the history of Mohammad in verses by Mumin 'alyy Kirmány. The author was a converted Parsee and died a few years ago, folio near 600 pp. A. H. 1264.

At Lucnow the *Hamlahe Haydary* of Bádzil (who died in A. II. 1123) has been lithographed, it is a rhymed version of the *Ma'árij alnobúwat*, in about 40,000 verses. Folio 238 & 333 pp. A. II. 1267.

The first No. of the *Journal Asiatique de Constantinople* has been received from the Editor, M. Cayel, whose introduction draws attention to the many gaps in early Turkish History and to the materials available in Turkey for filling them up. Much information is doubtless to be obtained from the *Medjmoua*, and *Memoranda* which he describes as abounding in the Turkish Libraries and which it is impossible that M. de Hammer can have exhausted. This No. promises well and if, as he hints in a short preliminary notice on the contribution of an Armenian gentleman, the Editor should undertake to publish translations of old Armenian MSS. his Journal may be expected to furnish Orientalists with much useful material.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JUNE, 1852.

The usual monthly meeting of the Society was held on Wednesday the 2d instant, at half-past 8 P. M.

SIR JAMES COLVILE, President, in the chair.

The proceedings of the last month were read and confirmed.

Read a letter from Captain Layard, forwarding, for presentation to the Society, a copper coin found at Gour, and another of the Dutch East India Company, dated 1790, brought from Coipang in the island of Timor.

Lieut. Burgess, duly proposed and seconded at the last meeting, was balloted for, and elected an ordinary member.

The following gentlemen were named for ballot at the next meeting.

C. Allan, Esq. C. S. ;—proposed by Sir James Colvile and seconded by Mr. J. R. Colvin.

J. J. Ward, Esq. C. S. ;—proposed by Mr. Grote and seconded by Sir James Colvile.

Read a report from the Council, recommending that Bábu Rájendra-lál Mittra having offered to edit the Prakrit Grammar of Kramadis'wara, the Chaitanya Chandrodaya Náta, and the Aniruddha Champu, for publication in the Bibliotheca Indica, his offer be accepted.

Resolved that the recommendation of the Council be adopted.

Communications were received —

1st. From C. Allan, Esq. Officiating Secretary to the Government of India, forwarding a report, by Commander Felix Jones, on the state of the tribes bordering on the River Tigris.

Referred to the Journal Committee.

2d. From Dr. Baddeley, submitting through Mr. Piddington, a paper entitled "Notes on Whirlwinds."

Ordered to be printed in the Journal.

3d. From Dr. A. Campbell, enclosing a paper entitled "Diary of a Journey through Sikim to the Frontiers of Thibet."

Ordered for publication in the Journal.

4th. From Lieut. F. J. Burgess, through Captain Thuillier, stating that the earthquake in Pillibheet of which he had previously communicated a short account commenced at Victoria Gunge exactly at 8° 7' 54" P. M. and ceased at 8° 29' 24" P. M.

Mr. Colvin drew the attention of the meeting to Mr. Bayley's offer to forward a notice of the figure of Jupiter which was lately exhibited to the Society, and recommended that the Secretaries be requested to communicate with him on the subject.

Rev. J. Long enquired if it was the intention of the Society to make any use of the MS. History of Tipperah which Dr. Wise had sent to it some time ago. He made the enquiry, he said, by desire of Dr. W. who wishes the MS. to be returned to him in the event of the Society's not printing it in the Bibliotheca Indica.

This led to some conversation as to the merit of the work; when it was resolved that the MS. be referred to the Philological Committee to consider whether the philological character of the work was such as to render desirable the publication of the whole or any part of it in the Bibliotheca Indica, or the retention of a copy of it for the Library.

The Librarian having submitted his usual monthly report the meeting adjourned.

Read and confirmed,

7th July, 1852.

(Signed) J. R. COLVIN.

Report of the Curator Museum Economic Geology.

Geology and Mineralogy.—Major Jenkins has sent us from Assam some specimens of a tufaceous Limestone from the Naga Hills in the neighbourhood of Jaipore, where it was laid open by a landslip. Major Jenkins observes that this locality was hitherto supposed to be devoid of any limestone, and that thus the discovery may be one of some local importance. The limestone itself has nothing worthy of note about it.

Mr. J. W. Biss has presented a few miscellaneous fossil specimens and minerals, mostly from the neighbourhood of Bristol, from which we shall be able to select a few for our collections.

Economic Geology.—Captain Sherwill has forwarded to the Museum, from Kursiong near Darjeeling, a quantity of common sealy Graphite of two different varieties, black and grey, of which he says :

“The bed or rather rocks bearing the mineral are 2600 feet thick ! This has been principally brought to light by a landslip that I went to examine ; No. 2 specimen is from the landslip.”

As before said, this is unfortunately only an inferior description of graphite, of which, though in such abundance, the sale would not probably pay the costs of carriage and freight, but I have pointed out to Captain Sherwill the chances that a more compact kind may be found amongst or near to this, and the compact kind, as well known, is highly valuable for its use in the fine arts.

Mr. Berdsmore of Mergui has forwarded a box of ores and slag which he supposed to be Copper, but the whole of them are Iron. A fine specimen of tin ore accompanies them.

I have obtained for the Museum a specimen of American machine-made bricks, which are brought from that country to California, and here as ballast, as I am informed ; and being sold here are found very useful from their stone-like hardness for the flooring of stables, and work of that description.

LIBRARY.

The following additions have been made to the Library during the month of May last.

Presented.

Sindh, and the Races that inhabit the valley of the Indus. By Lieut. R. F. Burton. London, 1851. 8vo.—PRESENTED BY THE AUTHOR.

Symbolical Euclid in Urdu, edited by William Lawler, Anglo-Arabic Master of the Madrasah College. Calcutta, 1852. 8vo. Lithograph.—BY THE EDITOR.

Proceedings of the Agri-Horticultural Society of the Punjab, from 1st May to 31st December, 1851. Lahore, 1852. 8vo.—BY THE SOCIETY.

The Oriental Christian Spectator for April, 1852.—BY THE EDITOR.

Journal of the Indian Archipelago for February, 1852, (two copies). —BY THE GOVERNMENT OF BENGAL.

Meteorological Register kept at the Surveyor General's Office, Calcutta, for the month of April, 1852.—BY THE DEPUTY SURVEYOR GENERAL.

The Calcutta Christian Observer for June, 1852.—BY THE EDITORS.

The Oriental Baptist for June, 1852.—BY THE EDITOR.

The Upadeshak for June, 1852.—BY THE SAME.

Is Bible the Book of All, or is it but the Book of the Few? A reply to Dr. Cahill's tract, distributed by Roman Catholics at the doors of St. John's and other Protestant places of worship. 8vo. Pamphlet.—BY THE AUTHOR.

Bibidāhrtha Saṅgraha, No. 6.—BY THE EDITOR.

The Tattwabodhinī Patrikā, No. 106.—BY THE TATTWABODHINĪ SABHA'.

Citizen Newspaper for May, 1852.—BY THE EDITOR.

Purchased.

Annals and Magazine of Natural History for March, 1852.

Journal des Savants for January, February and March, 1852.

Comptes Rendus, Nos. 5 to 13.

Edinburgh Review, No. 193.

RA'JENDRAL'AL MITTRA.

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FOR JULY, 1852.

At a meeting of the Asiatic Society held on the evening of the 7th of July, 1852.

J. R. COLVIN, Esq., Senior Member of the Council present, in the chair.

Bábu I'swarachandra Ghosál was introduced as a visitor by Bábu Ramgopaul Ghose.

The proceedings of the preceding meeting were read and confirmed.

The following presents were received.

1st. From C. E. Blechynden, Esq. Ghotal, a Hindu image found at Purnah, a village situated in Purgunnah Burdah, Zillah Hooghly.

2nd. From Dr. Fayrer, Rangoon, through Messrs. Henley and Co. 5 stone and 2 wooden images of Buddha.

3 wooden images of Buddhist Devotees.

1 Ditto of a monster.

A Burmese short sword.

Four pieces of Burmese painted glass.

A wooden instrument for keeping poison (?)

3rd. From J. W. Dalrymple, Esq. Under-Secretary to the Government of Bengal. A map of the province of Orissa, for the Museum of Economic Geology.

From Captain Thuillier, Deputy Surveyor General, forwarding a Map of Orissa for the Society's Library.

From Dr. N. Wallich, through Messrs. Cantor and Co., his translation of Professor Eschricht's Memoir on the Gangetic Dolphin.

Messrs. C. Allen, and J. J. Ward of the Civil Service, duly proposed and seconded at the last meeting, were balloted for, and elected ordinary members.

Bábu Ramánáth Bannerjea was named for ballot at the next meeting;—proposed by J. R. Colvin, Esq. and seconded by A. Grote, Esq.

Read a Report from the Council stating that at the recommendation of the Library Committee they have resolved on the publication of a Catalogue of the Library, the cost of such a work being estimated at about Rs. 360; and that they have further placed Rs. 500 at the Committee's disposal for the purchase of books.

A Meteorological Register kept at Rangoon, during the month of May last, by Dr. Fayer, communicated through Mr. Blyth, was laid on the table.

Ordered on a suggestion from Captain Thuillier that a copy of the Meteorological Register be placed at the disposal of the Editors of the daily papers of Calcutta for publication.

Read a letter from Mr. Beadon forwarding on behalf of Mr. Beaufort a collection of coins (22 specimens) found in Jessore near Mehamedpur, together with a report on the same by Bábu Rájendralál Mitra.

Resolved that Mr. Beaufort be thanked for the collection, and that he be at the same time requested to favour the Society with further particulars as to the finding of the coins.

The Curators and the Librarian submitted their usual monthly reports, and thanks having been voted for the above communications and presents, the meeting adjourned.

(Signed) J. W. COLVILE.

#### LIBRARY.

The undermentioned works have been added to the Library since the last meeting.

#### *Presented.*

Supplementum annotationis in librum as Sujutii de nominibus relativis, inscriptum لب اللباب continens novorum codicum collationem et excerpta

ex as-Sámánii libro *في الانساب* et ibno 'l-Athiri libro *اللباب*. Scripsit P. J. Veth. Lug. Bat. 1851, 4to.—PRESENTED BY THE CURATORS OF THE ACADEMY OF LEYDEN.

Specimen e literis Orientalibus exhibens librum Geneseos, secundum Arabicam Penteutachi Samaritani versionem ab Abu Saido conscriptam. Edit A. Kuenen, Lug. Bat. 1851, 8vo.—BY THE SAME.

Journal of the Academy of Natural Sciences of Philadelphia, 1st series, Vol. VI. Part I. and New Series Vol. II. Part II.—BY THE ACADEMY.

A Memoir of Samuel George Morton, M. D. By Charles D'Meigs, M. D. Philadelphia, 1851, 8vo. Pamphlet.—BY THE SAME.

Conversations about Hurricanes; for the use of Plain Sailors. By Henry Piddington, Esq. London 1852, 8vo.—BY THE AUTHOR.

Bulletin de la Société de Géographie, 4th series, Vol. I.—BY THE SOCIETY.

Observations made at the Magnetical and Meteorological Observations at Hobarton, Van Dieman's Island, Vol. II. London 1852.—BY DIRECTION OF THE BRITISH GOVERNMENT.

Über die Sprache der Jakuten. Grammatik, Text und Wörterbuch. Von Otto Böhtlingk. St. Petersburg, 1851, 4to.—BY THE AUTHOR.

Vendidad capita quinque priora. Emendavit Christianus Lassen, Bonnæ, 1852, 8vo. 2 parts.—BY THE AUTHOR.

The Journal of the Royal Geographical Society of London, Vol. XXI. BY THE SOCIETY.

On the Geology of Part of the Himálayan Mountains and Tibet. By Capt. R. Strachey. Pamphlet.—BY THE AUTHOR.

On the Physical Geography of the Provinces of Kumaon and Gurhwal. By R. Strachey. Pamphlet.—BY THE AUTHOR.

Zeitschrift der Deutschen Morgenländischen Gesellschaft. Fünfter Band IV. Heft.—BY THE GERMAN ORIENTAL SOCIETY.

Report of the Revenue Administration of the Lower Provinces for the official year 1850-51. Calcutta 1852, foolscap folio.—BY THE GOVERNMENT OF BENGAL.

Journal of the Indian Archipelago, for March and April 1852. Two copies each.—BY THE SAME.

Selections from the Records of the Bengal Government No. VI.—BY THE SAME.

On the Gangetic Dolphin. By Don. Fred. Eschricht. Translated from the Danish by Dr. N. Wallich, 8vo. Pamphlet.—BY THE TRANSLATOR.

An Essay on Bengali Poetry in Bengali, by Rangalála Bannerjya, 12mo.—BY THE AUTHOR.

Journal Asiatique No. 85.—BY THE ASIATIC SOCIETY OF PARIS.



Oriental Christian Spectator for May and June 1852.—BY THE EDITOR.

The Missionary for June and July 1852.—BY THE EDITOR.

The Tattwabodhini Patriká, No. 107.—BY THE TATTWABODHINI' SABHA'.

Annual Report of the Tattwabodhini Sabhá, 8vo. Pamphlet.—BY THE SAME.

Meteorological Register kept at the Surveyor General's Office, Calcutta, for the month of May, 1852.—BY THE DEPUTY SURVEYOR GENERAL.

The Oriental Baptist for July, 1852.—BY THE EDITOR.

The Calcutta Christian Observer for July 1852.—BY THE EDITORS.

The Upadeshak for July, 1852.—BY THE EDITOR.

The Benares Magazine for April, 1852.—BY THE EDITOR.

The Citizen for June 1852.—BY THE EDITOR.

The Purnachandrodaya for June, 1852.—BY THE EDITOR.

Wind and Current Charts, by Capt. Maury.—BY THE AUTHOR.

*Exchanged.*

The Calcutta Review, No. 33.

The Athenæum for November, 1851.

The London, Edinburgh and Dublin Philosophical Magazine, Nos. 13, 14, 15.

*Purchased.*

The Edinburgh Review, No. 194.

The Annals and Magazine of Natural History, for May, 1852.

RA'JENDRALA'L MITTRA

FOR AUGUST, 1852.

The Society met on the evening of the 4th instant, at half-past 8 P. M.

Sir JAMES COLVILLE, Kt., President, in the chair.

The following visitors were present at the meeting :—Mr. Montresor on the introduction of Mr. Welby Jackson, Mr. Sterndale on ditto of Captain Thuillier, and Colonel Bersenczey on ditto of Dr. Sprenger.

The proceedings of the last meeting were read and confirmed.

The following presentations to the Library and to the Museum of Antiquities were announced.

1st. From C. Murehead, Esq., Principal of the Grant Medical College, Bombay. Annual Report of the College for the Session 1851-52, and a copy of Dr. Cole's Introductory Lecture.

2nd. From Professor Fleischer on behalf of the German Oriental Society. The Journal of that Society, Vol. VI. part I.

3rd. From Major Troyer. His French translation of the Ráj-târangini, Vol. III.

From E. E. Salisbury, Esq., Secretary to the American Oriental Society, Vol. II. of the Journal of that Society. With reference to Mr. Salisbury's offer to establish an exchange of publications, *Resolved*, that a set of the Researches, and of the Journal as far as available, be presented to the American Oriental Society, and that future Nos. of the Journal be sent to it as published.

From Mr. J. T. Bodel Nyenhuis, Secretary to the Netherland's Society of Literature. A catalogue of the Society's Library.

From Herr Schröter, Secretary General of the Imperial Academy of Sciences of Vienna, a set of the Academy's publications as follows :

Proceedings of the Historical and Mathematical classes for the years 1849-50-51.

Transactions of ditto ditto for the same period.

Fontes Rerum Austriacarum, Vol. III.

Simony Alterthumer, Vol. I.

Referring to the Academy's wish to establish an exchange of its publications, *Resolved*, that a set of the Researches and of the Journal as far as available be presented to the Imperial Academy of Sciences of Vienna, and that future Nos. of the Journal be sent to it as published.

From Baron Von Hammer Purgstall—The Vienna Review for 1851, 4 Vols., and the first two Vols. of his History of Arabic Literature.

The following is an extract from the Baron's letter :—

"I take the liberty of presenting by your channel to the Honorable Asiatic Society of Calcutta, the first two Volumes of my history of Arabic Literature. This Asiatic Society having taken the lead of all those which have since followed its example, has also the first claim to the gratefulness of all Orientalists, and leads therefore the van in the dedication of the seven Asiatic Societies to which I have dedicated my work as a token of respect and thanks for the honor conferred upon me as their member."

*Resolved*—That the Society express to Baron Purgstall its cordial acknowledgments of the compliment paid to it in his dedication.

From Captain Layard, in the names of himself and Mr. J. J. Grey, of Goamutty, Malda; the following sculptures found in the north-western suburb of ancient Gour, now called Gungarampore.

1st. A reclining Female Figure with an Infant (from Mr. Grey).

2nd. An Image of the god Surya.

3rd. Two stones with carving, apparently parts of an entablature over a door-lintel.

From Mr. C. Rafn, Secretary to the Royal Society of Northern Antiquities—The latest publications of the Society.

The subjoined is an extract from Mr. Rafn's letter.

“Application has been made to our Society several times, as well from Great Britain, especially from Scotland, as also separately from Ireland, to publish an edition of the most important records contained in our ancient MSS. relative to the British Isles. The Archæological journeys lately undertaken by two of our Society's Fellows, Professor P. A. Munch, a Norwegian, and Mr. Worsaae, a Dane, have awakened an increased degree of interest for a project of this nature, and the time seems now to have arrived for proceeding to its realization. A new critical edition of the important Saga relating to the inhabitants of the Orkneys is the first object which we have in view, but that the plan may be carried out in a suitable manner, it is of importance to create an interest for the same in the British Isles, for whose historical and Archæological inquirers, this work would be principally designed. This matter we beg earnestly to recommend to the Council of your Society, and such of its fellows as may take an interest therein.”

The thanks of the Society were recorded for the above presentations.

Babu Rammanath Bannerjea, duly proposed and seconded at the last meeting, was balloted for and elected an ordinary member.

Captain W. J. Nicolls, 24th Regiment, Madras N. I., was named for ballot at the next meeting;—proposed by Mr. Grote, and seconded by the President.

Communications were received.

1st. From Captain Layard, sending his drawings of the Gour ruins, and of their architectural details for the inspection of the Society, and explaining his reason for sending them to England.

The following is an extract from Captain Layard's letter.

“Captain Thuillier will make over to you a short MS. and two books

of rough drawings made at Gour during my short stay there in January last. My intention is to send them to England to my brother to allow him to judge whether they are of sufficient interest for publication. However as I obtained permission from Government through the kind intercession of the Asiatic Society to visit the ruins, it is only just that I should show the Society that their kindness has not been abused, and that all such objects as I considered of interest from their antiquity have been transferred, though I fear very inadequately, to my sketch-book and MS.

“I should say that my notes were intended for publication (if approved of) in the Asiatic Society’s Journal, but as they would be of little worth without the drawings, and the execution of these in presentable form, being rather problematical in India, it is perhaps best to forward all to England.”

2nd. From Major M. Kittoe, enclosing a note on the ancient gold coins from near Benares, which were with the permission of Government exhibited at the general meeting of April last, together with copy of a note on the same, by Mr. E. C. Bayley.

Ordered for publication in the Journal with the Catalogue which previously accompanied the coins, and with the fac-similes which have been taken of such of them as are worthy of note.

3rd. From Dr. Fayrer, Field Hospital, Rangoon—Meteorological Register kept at Rangoon for the month of June, 1852.

4th. Major M. Kittoe, reporting on some ancient silver coins found at Majdaha, near Benares, and sending drawings of them.

Ordered that a letter be addressed to the Secretary to Government N. W. Provinces, in the hope of procuring the original coins for the Society’s inspection.

5th. From N. Bell, Esq., Secretary to the Royal Society of London, acknowledging receipt of the Journal Nos. 34 to 48, N. S.

6th. From W. Barlow, Esq., Secretary to the Royal Institution, London, acknowledging receipt of the Journal No. 224.

7th. From J. W. Dalrymple, Esq., Under-Secretary to the Government of Bengal, forwarding, for the information of the Society, copy of a letter from the Secretary to the Board of Revenue with its enclosure, respecting the existence of gold dust in the hill streams of the Char-duar Forest, in Central Assam.

Referred to the Journal Committee.

Mr. Piddington read the following three papers and exhibited the filtering apparatus referred to in one of them.

1st. Description of a cheap and simple apparatus for distilling off the Mercury from an Amalgam of gold or silver.

2nd. On filtering the water of tanks in large quantities for the use of towns.

3rd. On a Geometrical Measurement of the distances from Crest to Crest of the Barometric Waves in a Cyclone.

The Curator of the Zoological Department of the Museum exhibited, in sheets, a copy of his catalogue of birds the publication of which has been delayed by his desire to consult references which have only lately become available.

The Curator of the Museum of Economic Geology and the Librarian having submitted their usual monthly reports the meeting adjourned.

(Signed) J. W. COLVILE.

*Confirmed, September, 1st, 1852.*

#### LIBRARY.

The following books have been added to the Library since June last.

#### *Presented.*

Catalogus Codicum Orientalium Bibliothecæ Academiæ Lugdino Batavae. Auctore R. P. A. Dozy. Vol. II. Lugduni Batavorum 1851, 8vo.—PRESENTED BY THE CURATORS OF THE ACADEMY OF LEYDEN.

Sitzungsberichte der kaiserlichen Akademie der Wissenschaften. Mathematische Naturwissenschaftliche Classe, for 1849-50, (less No. for Dec. 51.) (Nos. 1 to 4 of Vol. VI. and Nos. 3 and 4 of Vol. VII.)—BY THE IMPERIAL ACADEMY OF NATURAL SCIENCES, VIENNA.

Ditto ditto, Philosophisch-historische Classe for 1849-50 and 51, (of Vol. VII. heft, 3, 4 and 5).—BY THE SAME, 50 and 51.

Denkschriften der kaiserlichen Akademie der Wissenschaften. Mathematische Naturwissenschaftliche Classe, Vols. I. and II. and Part 1. of Vol. III.—BY THE SAME.

Ditto ditto, Philosophisch Historische Classe, Vols. I. and II. Parts 1 and 2.—BY THE SAME.

Fontes rerum Austriacarum, österreichische Geschichtsquellen. Zweite Abtheilung Diplomata et acta. III. Band. Liber Foundationis Monasterii Twetlensis. Vienna 1851, 8vo.—BY THE SAME.

Archaeologische Analecten von Joseph Arneth. Wien.—BY THE SAME.

Die Alterthümer von Hallstätter Salzberg und dessen Umgebung. Von Friedrich Simony.—BY THE SAME.

Literaturgeschichte der Araber. Von ihrem Beginne bis zu Ende des



zwölften Jahrhunderts der Hidrehret. Von Hammer Purgstall, 2 Vols. royal 8vo.—BY THE AUTHOR.

Jahrbücher der Literatur for 1849.—BY BARON VON HAMMER PURGSTALL.

Bericht über den zu Kairo in Jahre D. H. 1251, in sechs Foliobanden erschieneenen türkischen Commentars des Mesnewi Rumi's von F. Hammer Purgstall.—BY THE AUTHOR.

Annaler for Nordisk Oldkyndeghed og Histoire, Udgivne af det Kongelige Nordiske Oldss-krift Selskab 1849-50. By the Royal Society of Northern Antiquities.

Antiquarisk Tidschrift, 1846-8.—BY THE SAME.

Report of the Royal Society of Northern Antiquities to its British and American Members, 8vo.—BY THE SAME.

Jáska's Nirukta sammt den Nighantavas herausgegeben von Rudolph Roth. Gottingen, 1849.—BY THE AUTHOR.

Report of the Grant Medical College, Bombay, for 1851-2.—BY C. MUREHEAD, ESQ. PRINCIPAL OF THE COLLEGE.

Dr. Cole's Introductory Lecture delivered at the above College on the 14th Jan.—BY THE SAME.

Catalogus van de Bibliotheek der Maatschappij van Nederlandsche letterkunde, te Leiden. Leyden 1847, 3 vols. 8vo.—BY THE SECRETARY OF THE NETHERLAND LITERARY SOCIETY.

Journal of the American Oriental Society, Vol. II. and Part 1 of Vol. III.—BY THE SOCIETY.

Catalogue of the Calcutta Public Library 1846.—BY THE CURATORS OF THE LIBRARY.

Zeitschrift der Deutschen morgenländischen Gesellschaft, Vol. VI. Parts 1, 2.—BY THE GERMAN ORIENTAL SOCIETY.

Premier Memoir sur le Sankhya, par M. Barthelemy St. Hilaire., Paris 1852, 4to.—BY THE AUTHOR.

Histoire des Rois de Kachmir, Vol. III. Paris 1852, 8vo.—BY MAJOR A. TROYER.

The Indian Opium, its mode of preparation for the Chinese Market, from Drawings by Capt. Sherwill. London 1852, 4to.—BY CAPT. SHERWILL.

Philosophical Transactions for 1851, Part II. BY THE ROYAL SOCIETY OF LONDON.

Journal of the Indian Archipelago for March, April and May, 1852.—BY THE EDITOR.

The Calcutta Christian Observer for August, 1852.—BY THE EDITORS.

The Oriental Baptist for August, 1852.—BY THE EDITOR.

The Oriental Christian Spectator for July, 1852.—BY THE EDITOR.

The Upadeshak for August, 1852.—BY THE EDITOR.

An Examination of Religions, Part I. containing a Consideration of the Hindu Shastras in Sanskrit with an English Version and Preface. Mirzapur, 1852, 12mo. 5 copies.—BY THE AUTHOR, THROUGH REV. K. M. BANNERJYA.

The Missionary for August, 1852.—BY THE EDITOR.

Quarterly Journal of the Royal Geological Society of London, Nos. 29 and 30.—BY THE SOCIETY.

Address delivered at the Anniversary Meeting of the Royal Geological Society of London on the 20th of February, 1852, by W. Hopkins, Esq. London, 1852.—BY THE ROYAL GEOLOGICAL SOCIETY OF LONDON.

Bulletin de la Société de Géographie 4me. série Tome II.—BY THE SOCIETY.

Journal Asiatique, Nos. 86 to 89.—BY THE ASIATIC SOCIETY OF PARIS.

Journal of the Agri-Horticultural Society of India. Vol. VIII. Part I.—BY THE SOCIETY.

Meteorological Register kept at the Surveyor General's Office, Calcutta, for June, 1852.—BY THE DEPUTY SURVEYOR GENERAL.

Tattwabodhiní Patrikā, No. 108.—BY THE TATTWABODHINI' SHABHA'.

Purnachandrodaya for July, 1852.—BY THE EDITOR.

The Citizen for July, 1852.—BY THE EDITOR.

Bibidhārtha Sangraha, No. 8.—BY THE EDITOR.

*Exchanged.*

The Athenæum from January to May, 1852.

Jamieson's Journal, Nos. 103-4.

London, Edinburgh and Dublin Philosophical Magazines, Nos. 16—20.

*Purchased.*

Bunsen's Egypt, Vol. I.

Mill's History of India, with continuation by Wilson, 9 vols.

North British Review, No. 32.

The Annals and Magazine of Natural History for June, 1852.

Elphinstone's India, 1 Vol.

Birds' Researches into Buddhist Antiquities, 1 Vol. fol.

Comptes Rendus, Nos. 14 to 21.

Journal des Savants for April, 1852.

Havelock's War in Afghanistan.

Fergusson's Illustrations of the Rock Cut Temples of India.

Ihâi-ul-'Olûm by ghazzâly, Arabic MS.

RA'JENDRALA'L MITTRA.

## FOR SEPTEMBER, 1852.

The usual Monthly General meeting of the Asiatic Society was held on the 1st instant at half-past 8 P. M.

Sir JAMES COLVILLE, President, in the Chair.

The following visitors were announced, viz. Mr. Gonne on the introduction of Mr. Grote; Mr. Ward on the introduction of Capt. Thuillier. The proceedings of the last meeting were read and confirmed.

Presents were received—

From Mr. W. W. Nicholls, Mission House, Sarawak. The skeleton of an Ourang Outang obtained on the left bank of the Batang Suppar river, in Borneo.

From A. J. M. Mills, Esq. A stone figure of Siva.

From Dr. Morgan of H. M. Ship Fox, through Dr. Fayrer. Two Burmese MSS. found in the house of the Governor of Bassien.

Captain W. J. Nicholls, 24th Regiment Madras N. I., proposed and seconded at the last meeting, was balloted for, and elected an ordinary member.

Dr. Morgan of H. M. Ship Fox, was named for ballot at the next meeting;—proposed by Dr. Sprenger, and seconded by the President.

The President submitted on behalf of the Council the following reports:

1st. Recommending that the offer of Pandita Is'varachandra Bidyáságara to edit the following Nátakas for publication in the Bibliotheca Indica, be accepted.

1. Venisanhára.
2. Anargharághava.
3. Prosannarághava.
4. Nágánanda.
5. Lalitamádhava.
6. Vidagdhamádhava.

2d. Suggesting that the old stock of the Society's Journal be henceforward sold at the following reduced prices, viz.

|                         |                                    |   |    |   |
|-------------------------|------------------------------------|---|----|---|
| Nos. 110, 118, and 123. | { To subscribers, at . . . . . Rs. | 1 | 0  | 0 |
|                         | { „ Non-ditto, . . . . .           | 1 | 8  | 0 |
| Nos. 123 to 227.        | { To subscribers, at.. . . . .     | 0 | 12 | 0 |
|                         | { „ Non-ditto, . . . . .           | 1 | 4  | 0 |

(Ordered that these recommendations of the Council be adopted).

3d. Bringing to the notice of the meeting the wishes of Lieut. Maury of the National Observatory, Washington, as explained in the following extracts from the letters to Dr. Buist, Secretary to the Bombay Geographical Society, through whom copies of Lieut. M.'s Wind and Current Charts were lately presented to the Society.

"I am very much in want of materials for my charts relating to your seas—and this occurs to me. If you can gain access to any number of old log-books, which contain the direction of the wind once for every eight hours, and which give daily the temperature of air and water, though this last shall not be a *sine qua non*, I will pay for abstracts therefrom at the rate of two cents the day, i. e. suppose the copyist makes the abstract from the log of a vessel that has been 100 days at sea, he will receive therefore £2.

"The tracks which I want on these terms relate to the Indian Ocean only, calling that the Indian Ocean, which extends south from Asia between Africa and New Holland, and which is to the westward of a line drawn from New Guinea to China. This is the region as to which I am most lame of materials, and for abstracts of which I will agree to pay as above, if you deem it expedient to employ one or more copyist on these terms. I have employed copyists at the rate of 2 cents per log, for other parts of the ocean, and a quick writer can easily earn dollars 6, or dollars 8 a day."

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"I am very desirous to obtain some account of the Infusoria in the rain-dust; can you not help me to it?"

Resolved that the Society offer to receive and communicate to Lieut. Maury any information which may be elicited by the publication of the above extracts.

The President then addressed the meeting as follows:—

"I need hardly remind you that since our last meeting, the Society has sustained a great loss by the death of one of its most distinguished and accomplished members, Mr. Henry Torrens.

"On the morning of the day on which we last met, I fully expected to have the pleasure of bringing him hither with me in the evening; you are all probably aware that in the course of that very day he was brought to my house dangerously ill, and that in less than a fortnight he was numbered with the dead.

“I am conscious that there are several here present whose earlier and more intimate acquaintance with Mr. Torrens, and whose longer connection with this Society, make them more competent than I am, both to speak fitly of his brilliant and versatile talents, and of the particular services which, in the period of upwards of fifteen years, during which he was a member of it, he rendered to the Asiatic Society of Bengal; yet I cannot forget that even I had, for nearly seven years, the happiness of possessing his friendship, and of occasionally enjoying his conversation. Since his demise it has been my painful duty to look over some of his note books and unfinished MSS., and I can truly say that that inspection has strengthened the impressiou which I previously entertained of the wide and diversified range of his knowledge, and of the restless activity of his mind. Again, there is no reason why I should not speak of his labours on behalf of this Society; of them each of us may say *monumenta manent*, and so long as the pages of our Journal, and the collections accumulated in our Museum, shall endure, *monumenta manebant*.

“Mr. Torrens, as many of you know, came to this country at an age somewhat more advanced than that at which the members of his distinguished service generally begin their career. He had completed a classical education at the University of Oxford; he had afterwards mixed more largely than most of his standing, in general Society. He possessed several of the languages of Modern Europe. He was more than commonly conversant with the literature of Europe; yet it must be admitted, that in spite of these manifold distractions he took kindly to the land of his adoption. In truth, the East had many and peculiar charms for his lively fancy and active spirit. Its languages (particularly Arabic and the kindred tongues), its antiquities, its history, its tradition derived from ages when history melts in fable, the origin and distribution of its races—were all subjects of deep and constant interest to him. It is not for me to assign a precise value to his labour as an Orientalist. Those, however, if such there be, who would look at his works of this kind with a critical eye, and contrast them with the productions of more profound and laborious scholars, would do well to recollect that they were the fruits of hours snatched from the claims of official life, and that these various studies were combined with the cultivation of general literature, with researches into military history—



to the study of which he was attracted by the memory of his distinguished father,—nay more, with devotional duty paid at the shrines of the lighter Muses, and with excellence in more than one of the graceful arts which contribute so much to the enjoyment of social life.

“But it is not merely as one of its most accomplished members that Mr. Torrens claims from the Society, the tribute of its regret. For nearly six years he served it as Honorary Secretary. Now, in every numerous body there must be differences of opinion, and these differences will beget opposition, and it may be that some of those who now hear me, may have heretofore objected to this or that detail of Mr. Torrens’s administration. I think, however, that all, who look but candidly upon that portion of the Society’s history, will admit, that if there were any faults in his administration, they were the faults of a generous temper, which in aiming at great ends, does not very nicely calculate the means, and that in all he did, he was animated by a sincere and zealous desire to maintain and extend the reputation and usefulness of this Society.

“I find that on the occasion of his retirement in 1846, from the Office of Secretary, a general meeting of the Society came to this resolution.

“That the Asiatic Society of Bengal, on the occasion of their being deprived of Mr. Torrens’s services as their Honorary Secretary, do hereby record their grateful sense of the distinguished zeal and ability with which, for several years, he has conducted the duties of that office. And as a testimonial of their respect, they further resolve to elect Mr. Torrens an Honorary Vice-President of the Society, and they solicit that, in this capacity, he will continue to afford them his highly valuable co-operation in the prosecution of the numerous objects of literary and antiquarian research, which he has already pursued with such eminent success.”

“I am sure that none will, now that he has been taken from us, be disposed to dissent from those terms of praise, with which the Society recognised the value of his services whilst they were yet recent, and he yet alive, and certain I am, that, even if any there be who may think that in the warmth of friendship I have said anything which their colder judgment cannot approve, there are none who will dissent from the more measured terms of the resolution, which I have now the honour to propose, which are ;—

“That this meeting desires to record its sense of the loss which the Asiatic Society of Bengal has sustained by the death of Henry Whitlock Torrens, Esq. B. C. S., who was for upwards of fifteen years an accomplished and distinguished member of the Society, and whose eminent services when holding the office of Honorary Secretary were, on his retirement from that office in November, 1846, especially acknowledged in the resolution then recorded by the Society.”

The resolution having been seconded by Mr. J. R. Colvin was carried unanimously.

Read letters—

1st.—From Mr. Beale, Agra College, inclosing a paper on the Influence of the moon on the Weather, in continuation of Mr. Middleton's observations on the same subject, for the year 1852.

2nd.—From F. Skipwith, Esq., Sylhet, enclosing a rough and imperfect copy of an inscription on a stone, at a place called Laur, in Sylhet, and announcing that Captain Cave intends ere long to visit the spot personally, and to communicate to the Society the result of his visit.

3rd.—From Dr. Fayer, Rangoon, forwarding a Meteorological Register kept at the Field Hospital, Rangoon, for the month of July.

Subjoined is an extract from a private letter of Dr. F. to Mr. Blyth regarding the apparatus exhibited at the July meeting.

“The instrument sent down to you as for containing poison, is a very different thing. It is for making fire by compressing the air suddenly. A piece of cotton being stuck on the end of the piston, it is suddenly forced down and withdrawn at the same instant. The cotton comes out ignited. I have lit dozens of cheroots with that very one. It is wonderfully ingenious for a savage to have found out. I have seen a complicated brass instrument in lecture-rooms at home that did not do it a bit better.”

4th.—From Dr. Bedford, sending an English translation, by Sub-Assistant Surgeon Buddinauth Birmo, of a Mugh system of medicine. Referred to the Council.

Reports having been received from the Librarian and the Curator of the Zoological Department, the meeting adjourned.

(Signed) WELBY JACKSON, V. P.

Oct. 6th, 1852.

## LIBRARY.

The following books have been added to the Library since July last.

*Presented.*

Catalogue of the Stars near the Ecliptic, observed at Markree during the years 1848, 1849, and 1850, and whose places are supposed to be hitherto unpublished. Vol. I. containing 14,888 stars. Dublin, 1851. Presented by order of the British Government.

Meteorological Observations made at the Meteorological Bungalow on Dodobetta, 8,640 feet above the level of the sea, in the years 1848—50, under the direction of the late T. G. Taylor, and of W. S. Jacob. Madras, 1852, 4to. By the Madras Government.

Rapport adressé a M. Directeur General des Musées Nationaux, sur l'exploration scientifique des principales collections E'gyptiennes renfirmées dans les divers Musées Publiques de l'Europe, par M. Emmanuel de Rougé. Pamphlet.—BY THE AUTHOR.

Abu 'l Mahasin ibn tagri Bardii Annales, quibus titulus est *النجوم الزاهرة في ملوك مصر والقاهرة* Tomi I. Partem priorum, ediderunt T. G. J. Juynboll et B. F. Matthes. Lugdini Batavorum, 1852.—BY THE CURATORS OF THE ACADEMY OF LEYDEN.

Oriental Christian Spectator for August, 1852.—BY THE EDITOR.

The Bibidhārtha Sangraha, No. 9.—BY THE EDITOR.

Meteorological Register kept at the Surveyor General's Office, Calcutta, for the months of June and July, 1852.—BY THE DEPUTY SURVEYOR GENERAL.

The Citizen newspaper for July, 1852.—BY THE EDITOR.

The Purnochandrodaya newspaper for July, 1852.—BY THE EDITOR.

*Exchanged.*

The London, Edinburgh, and Dublin Philosophical Magazine, Nos. 21, 22. Jamison's Journal for July, 1852.

*Purchased.*

The Edinburgh Review, No. 195.

Halled's Gentoo Law.

Annals and Magazines of Natural History for July, 1852.

Comptes Rendus, Nos. 22—25.

Journal des Savants for May and June, 1852.

Humboldt's Cosmos, by Mrs. Col. Sabine, Vol. III. p. 2.

RAJENDRA'LA'L MITTRA.

*Meteorological Register kept at the Surveyor General's Office, Calcutta, for the Month of June, 1852.*

| Observations made at Sun-rise. |                  |         |                                 | Maximum Pressure observed at 9 h. 50 m. |                           |              |         | Observations made at Apparent Noon. |                |                           |              |          |                             |                |               |
|--------------------------------|------------------|---------|---------------------------------|-----------------------------------------|---------------------------|--------------|---------|-------------------------------------|----------------|---------------------------|--------------|----------|-----------------------------|----------------|---------------|
| Date.                          | Temperature.     |         | Wind.<br>Direction at Sun-rise. | Aspect of Sky.                          | Bar. F.<br>32° F. red. to | Temperature. |         | Wind.<br>Direction at 9h 50m.       | Aspect of Sky. | Bar. F.<br>32° F. red. to | Temperature. |          | Wind.<br>Direction at Noon. | Aspect of Sky. |               |
|                                | Of Mer.          | Of Air. |                                 |                                         |                           | W. Bulb.     | Of Mer. |                                     |                |                           | Of Air.      | W. Bulb. |                             |                |               |
| 1                              | Inches<br>29.738 | 83.3    | °                               | Clear                                   | Inches<br>29.813          | 89.2         | °       | 83.5                                | S. W.          | Cumulo-strati             | 29.788       | 93.0     | °                           | Cumulo-strati  |               |
| 2                              | .727             | 80.2    | 80.1                            | S.                                      | .774                      | 88.1         | 90.2    | 83.5                                | S.             | Ditto                     | .674         | 92.5     | 93.6                        | S. S. E.       | Ditto         |
| 3                              | .623             | 82.6    | 83.1                            | S. E.                                   | .682                      | 89.8         | 92.5    | 84.5                                | S. E.          | Cumuli                    | .623         | 93.3     | 94.5                        | S.             | Cumuli        |
| 4                              | .613             | 84.3    | 81.7                            | S. E.                                   | .624                      | 91.2         | 93.0    | 86.1                                | S. E.          | Clear                     | .623         | 94.9     | 96.0                        | S. E.          | Clear         |
| 5                              | .563             | 85.0    | 85.1                            | S. E.                                   | .624                      | 90.7         | 92.1    | 85.8                                | S.             | Cumuli                    | .617         | 94.0     | 95.1                        | S.             | Cumuli        |
| 6 S.                           | .535             | 84.5    | 85.0                            | S.                                      | .643                      | 90.3         | 93.0    | 84.6                                | S. S. E.       | Cumulo-strati             | .621         | 90.5     | 94.5                        | S. E.          | Cumulo-strati |
| 7                              | .573             | 84.6    | 85.0                            | S.                                      | .611                      | 90.0         | 90.9    | 83.7                                | S.             | Ditto                     | .564         | 92.9     | 93.8                        | S.             | Cumuli        |
| 8                              | .493             | 77.5    | 77.5                            | S. E.                                   | .583                      | 81.3         | 84.6    | 79.0                                | S. S. E.       | Cloudy                    | .563         | 87.0     | 88.0                        | S. E.          | Cloudy        |
| 9                              | .583             | 78.3    | 78.3                            | S. E.                                   | .689                      | 85.8         | 88.0    | 81.0                                | S. E.          | Cumuli                    | .652         | 90.4     | 91.7                        | S.             | Cumuli        |
| 10                             | .635             | 83.2    | 83.3                            | S.                                      | .674                      | 89.2         | 90.4    | 84.0                                | S.             | Cumulo-strati             | .643         | 92.5     | 93.8                        | S.             | Cumulo-strati |
| 11                             | .620             | 82.8    | 82.9                            | S.                                      | .649                      | 85.4         | 86.0    | 82.4                                | S.             | Ditto                     | .616         | 83.2     | 82.0                        | S.             | Raining       |
| 12                             | .595             | 81.7    | 81.8                            | S.                                      | .628                      | 88.0         | 89.6    | 82.4                                | S. S. W.       | Ditto                     | .595         | 91.2     | 92.5                        | S.             | Cumulo-strati |
| 13 S.                          | .609             | 80.8    | 80.8                            | S. E.                                   | .663                      | 85.8         | 87.3    | 83.9                                | S. S. W.       | Ditto                     | .653         | 85.4     | 83.4                        | S. E.          | Cloudy        |
| 14                             | .650             | 81.3    | 81.4                            | E.                                      | .662                      | 86.4         | 87.0    | 81.6                                | N. E.          | Ditto                     | .620         | 89.6     | 90.9                        | N.             | Cumulo-strati |
| 15                             | .545             | 82.0    | 82.2                            | S. E.                                   | .611                      | 82.2         | 81.0    | 79.7                                | S. S. E.       | Raining                   | .513         | 79.6     | 79.4                        | S. S. E.       | Raining       |
| 16                             | .474             | 80.2    | 80.0                            | S. E.                                   | .529                      | 89.6         | 81.0    | 80.2                                | S. E.          | Cloudy                    | .524         | 83.0     | 83.7                        | S. S. E.       | Cloudy        |
| 17                             | .505             | 80.4    | 80.4                            | S. E.                                   | .566                      | 80.6         | 80.0    | 81.4                                | S. E.          | Ditto                     | .566         | 83.0     | 83.0                        | S. E.          | Ditto         |
| 18                             | .570             | 79.2    | 79.0                            | S. E.                                   | .613                      | 84.2         | 86.4    | 83.2                                | S. E.          | Ditto                     | .586         | 88.4     | 90.0                        | S. E.          | Ditto         |
| 19                             | .573             | 82.2    | 82.6                            | S. S. E.                                | .603                      | 87.2         | 87.8    | 82.8                                | S. S. E.       | Cumulo-strati             | .582         | 89.6     | 90.6                        | S. E.          | Ditto         |
| 20 S.                          | .537             | 82.0    | 82.2                            | S. S. E.                                | .574                      | 87.5         | 88.6    | 83.4                                | S. S. E.       | Ditto                     | .544         | 90.4     | 91.0                        | S. W.          | Ditto         |
| 21                             | .475             | 81.8    | 81.8                            | E.                                      | .555                      | 87.0         | 89.0    | 82.8                                | E. S. E.       | Ditto                     | .481         | 90.2     | 90.5                        | E. N. E.       | Ditto         |
| 22                             | .491             | 82.1    | 82.2                            | N. E.                                   | .520                      | 86.1         | 87.5    | 82.8                                | E. N. E.       | Ditto                     | .511         | 89.6     | 88.0                        | E. N. E.       | Cloudy        |
| 23                             | .526             | 81.6    | 81.7                            | N. E.                                   | .554                      | 85.4         | 86.8    | 81.9                                | N. E.          | Ditto                     | .521         | 88.0     | 88.9                        | N. E.          | Cumulo-strati |
| 24                             | .498             | 81.7    | 81.8                            | E. N. E.                                | .527                      | 87.2         | 88.7    | 82.6                                | E. S. E.       | Ditto                     | .497         | 90.3     | 91.0                        | E. S. E.       | Ditto         |
| 25                             | .445             | 81.3    | 81.4                            | N. E.                                   | .477                      | 84.3         | 84.6    | 81.4                                | N. E.          | Cloudy                    | .434         | 85.6     | 86.2                        | N. E.          | Cloudy        |
| 26                             | .401             | 81.3    | 81.2                            | N. N. E.                                | .450                      | 85.5         | 87.0    | 82.6                                | E. N. E.       | Cumulo-strati             | .409         | 88.4     | 88.6                        | E. N. E.       | Cumulo-strati |
| 27 S.                          | .415             | 81.4    | 81.6                            | S. E.                                   | .490                      | 84.0         | 84.4    | 81.8                                | S. E.          | Cloudy                    | .479         | 85.0     | 85.0                        | S. E.          | Cloudy        |
| 28                             | .515             | 80.4    | 80.2                            | S.                                      | .573                      | 83.3         | 82.3    | 79.8                                | S.             | Drizzling                 | .548         | 83.7     | 83.4                        | S. S. E.       | Ditto         |
| 29                             | .523             | 80.5    | 80.4                            | S. S. W.                                | .579                      | 83.3         | 84.8    | 81.2                                | S.             | Cloudy                    | .552         | 86.2     | 86.3                        | S. S. W.       | Ditto         |
| 30                             | .539             | 81.8    | 81.8                            | S. S. W.                                | .608                      | 82.4         | 83.3    | 81.0                                | S.             | Ditto                     | .607         | 83.4     | 83.8                        | S. S. E.       | Ditto         |
| Mean.                          | 29.553           | 81.7    | 81.8                            | 79.9                                    | 29.606                    | 86.1         | 87.3    | 82.5                                | ....           | ....                      | 29.574       | 88.5     | 89.1                        | ....           | ....          |



# [ Meteorological Register, continued.]

Observations made at 2h. 40m.

Minimum Pressure observed at 4 p. m.

| Observations made at 2h. 40m. |         |         |          |                             |                     |         |         |          |                      | Minimum Pressure observed at 4 p. m. |               |         |          |                       |                     |          |                |              |           | Observations made at sun-set. |         |         |                |           |      |       |                                  |             |                 | Rain Gauges.   |             |       |               |       |      |   |    |    |    |  |
|-------------------------------|---------|---------|----------|-----------------------------|---------------------|---------|---------|----------|----------------------|--------------------------------------|---------------|---------|----------|-----------------------|---------------------|----------|----------------|--------------|-----------|-------------------------------|---------|---------|----------------|-----------|------|-------|----------------------------------|-------------|-----------------|----------------|-------------|-------|---------------|-------|------|---|----|----|----|--|
| Temperature.                  |         |         |          | Wind.                       | Aspect of Sky.      |         |         |          | Temperature.         |                                      |               |         | Wind.    | Aspect of Sky.        |                     |          |                | Temperature. |           |                               |         | Wind.   | Aspect of Sky. |           |      |       | Maximum and Minimum Thermometer. |             | in Sun's rays.  |                | Elevations. |       | Moon's Phases | Date. |      |   |    |    |    |  |
| Bar. red. to 32° F.           | Of Mer. | Of Air. | W. Bulb. | P. m. Direction at 2h. 40m. | Bar. red. to 32° F. | Of Mer. | Of Air. | W. Bulb. | Direction at 4 p. m. | Bar. red. to 32° F.                  | Of Mer.       | Of Air. | W. Bulb. | Direction at Sun-set. | Bar. red. to 32° F. | Of Mer.  | Of Air.        | W. Bulb.     | Direction | Bar. red. to 32° F.           | Of Mer. | Of Air. | W. Bulb.       | Direction | Max. | Mean. | Min.                             | Max. Therm. | Feet. 60. Upper | Feet. 5. Lower |             |       |               |       |      |   |    |    |    |  |
| 29.743                        | 95.5    | 95.0    | 84.7     | E.                          | Scatd. clouds       | 29.706  | 95.0    | 95.0     | 83.7                 | E.                                   | Clear         | 29.692  | 92.3     | 90.3                  | 82.5                | S. E.    | Cloudy         | 96.8         | 88.1      | 79.4                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | Inch. | 1             |       |      |   |    |    |    |  |
| .665                          | 93.5    | 95.0    | 84.5     | S. E.                       | Cumulo-strati       | .641    | 93.9    | 94.1     | 84.2                 | S. E.                                | Cumulo-strati | .599    | 90.0     | 88.5                  | 82.8                | S. E.    | Clear          | 94.4         | 83.8      | 73.2                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | 0.68  | 2    |   |    |    |    |  |
| .578                          | 95.1    | 95.5    | 86.6     | S. E.                       | Clear               | .550    | 95.5    | 95.9     | 85.6                 | S. E.                                | Clear         | .517    | 91.5     | 91.0                  | 84.5                | S. E.    | Ditto          | 96.4         | 88.3      | 80.2                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | 12h. | 3 |    |    |    |  |
| .554                          | 96.2    | 96.9    | 88.2     | S. S. E.                    | Cumuli              | .522    | 96.0    | 95.9     | 87.9                 | S. S. E.                             | Cumuli        | .499    | 92.8     | 92.6                  | 86.0                | S. S. E. | Cumuli         | 97.7         | 89.6      | 81.4                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | 4 |    |    |    |  |
| .530                          | 96.0    | 96.8    | 86.0     | S.                          | Ditto               | .502    | 96.1    | 96.5     | 86.2                 | S.                                   | Cloudy        | .512    | 96.0     | 93.4                  | 77.5                | S. E.    | Cloudy         | 97.0         | 89.5      | 82.0                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | 5 |    |    |    |  |
| .567                          | 94.5    | 95.6    | 86.5     | S.                          | Cumulo-strati       | .552    | 93.4    | 93.5     | 83.5                 | S.                                   | Cumulo-strati | .547    | 90.3     | 89.6                  | 83.3                | S.       | Cumulo-strati  | 95.5         | 87.8      | 80.0                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | 6 |    |    |    |  |
| .490                          | 94.0    | 94.5    | 85.0     | S.                          | Cumuli              | .466    | 94.0    | 93.8     | 85.1                 | S.                                   | Ditto         | .549    | 87.3     | 86.6                  | 81.0                | S.       | Cloudy         | 95.0         | 87.6      | 80.2                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | 7 |    |    |    |  |
| .556                          | 88.5    | 89.0    | 81.4     | S. E.                       | Cloudy              | .538    | 88.9    | 89.3     | 80.4                 | S.                                   | Cloudy        | .549    | 87.3     | 86.6                  | 81.0                | S.       | Cumulo-strati  | 89.6         | 81.3      | 73.0                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | 8  |    |    |  |
| .587                          | 93.4    | 94.4    | 84.0     | S.                          | Cumuli              | .559    | 94.0    | 94.4     | 83.3                 | S.                                   | Cumuli        | .572    | 92.0     | 91.0                  | 83.2                | S.       | Cumulo-strati  | 94.8         | 84.7      | 74.5                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | 9  |    |    |  |
| .575                          | 93.3    | 92.8    | 83.8     | S.                          | Cumulo-strati       | .547    | 94.0    | 94.4     | 83.0                 | S.                                   | Cumulo-strati | .593    | 88.0     | 85.6                  | 80.4                | N. E.    | Scatd. clouds  | 95.0         | 87.7      | 80.4                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | 10 |    |    |  |
| .570                          | 84.6    | 86.0    | 82.0     | S.                          | Cloudy              | .553    | 87.0    | 88.3     | 83.2                 | S.                                   | Cloudy        | .571    | 86.5     | 85.9                  | 81.3                | S. E.    | Ditto          | 89.3         | 84.0      | 78.6                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | 11 |    |    |  |
| .521                          | 93.8    | 94.3    | 81.6     | S. S. W.                    | Cumulo-strati       | .507    | 94.0    | 94.2     | 81.3                 | S. S. W.                             | Cumulo-strati | .566    | 82.8     | 80.7                  | 78.5                | S. E.    | Raining        | 94.6         | 86.6      | 78.6                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | 12 |    |  |
| .602                          | 83.0    | 83.4    | 80.7     | S. E. S. E.                 | Cloudy              | .571    | 84.0    | 85.0     | 81.0                 | S. E.                                | Ditto         | .582    | 85.3     | 85.0                  | 81.3                | S. S. E. | Cloudy         | 89.6         | 83.6      | 77.5                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | 13 |    |  |
| .567                          | 86.4    | 85.0    | 82.3     | S. W.                       | Ditto               | .523    | 84.7    | 85.2     | 82.4                 | S. S. W.                             | Cloudy        | .563    | 84.2     | 84.2                  | 81.4                | S.       | Ditto          | 91.9         | 85.2      | 78.4                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | 14 |    |  |
| .494                          | 81.6    | 82.3    | 80.3     | S.                          | Ditto               | .467    | 82.2    | 82.1     | 79.6                 | S. E.                                | Ditto         | .477    | 82.2     | 82.0                  | 80.4                | E.       | Scatd. clouds  | 87.0         | 81.7      | 76.4                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | 15 |    |  |
| .466                          | 87.0    | 88.0    | 84.2     | S. E.                       | Cumulo-strati       | .447    | 87.4    | 87.2     | 82.6                 | S. E.                                | Cumulo-strati | .473    | 85.0     | 84.8                  | 81.5                | S. E.    | Cloudy         | 88.5         | 82.8      | 77.0                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | 16 |    |  |
| .494                          | 86.5    | 86.6    | 83.0     | S. E.                       | Ditto               | .484    | 87.1    | 86.0     | 81.4                 | S. E.                                | Cloudy        | .531    | 84.0     | 84.0                  | 81.8                | S. E.    | Scatd. clouds  | 88.0         | 82.3      | 76.6                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | 17 |    |  |
| .534                          | 88.5    | 88.8    | 83.3     | S. E.                       | Cloudy              | .537    | 84.0    | 84.3     | 81.7                 | S. S. E.                             | Ditto         | .546    | 84.4     | 84.8                  | 83.0                | S.       | Cloudy         | 89.9         | 83.0      | 76.0                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | 18 |    |  |
| .469                          | 92.0    | 92.2    | 84.0     | S. E.                       | Cumulo-strati       | .510    | 88.6    | 88.6     | 83.6                 | S. S. E.                             | Ditto         | .545    | 86.8     | 86.3                  | 82.4                | S.       | Ditto          | 90.7         | 85.2      | 79.7                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | 19 |    |  |
| .439                          | 89.0    | 87.4    | 82.6     | N. E.                       | Cloudy              | .451    | 91.8    | 91.2     | 82.4                 | S. E.                                | Cumulo-strati | .502    | 88.4     | 87.3                  | 81.4                | S. E.    | Clcy. to the W | 92.9         | 85.8      | 78.6                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | 20 |    |  |
| .448                          | 88.6    | 86.4    | 82.4     | E. N. E.                    | Ditto               | .405    | 90.0    | 90.9     | 84.2                 | N. E.                                | Ditto         | .434    | 88.5     | 88.0                  | 82.2                | E.       | Cirro-strati   | 91.7         | 85.4      | 79.0                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | 21 |    |  |
| .475                          | 90.9    | 90.4    | 83.0     | S. E.                       | Cumulo-strati       | .413    | 87.8    | 88.1     | 82.4                 | E.                                   | Cloudy        | .472    | 85.4     | 84.8                  | 81.6                | E. N. E. | Cumulo-strati  | 90.6         | 84.8      | 79.0                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | 22 |    |  |
| .452                          | 86.5    | 85.6    | 83.2     | S. E.                       | Cloudy              | .468    | 90.6    | 90.2     | 81.4                 | E. S. E.                             | Cumulo-strati | .504    | 86.5     | 86.2                  | 81.9                | S. E.    | Scatd. clouds  | 91.8         | 85.2      | 78.5                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | 23 |    |  |
| .392                          | 87.8    | 87.8    | 82.6     | N.                          | Ditto               | .420    | 86.4    | 87.0     | 83.3                 | S. E.                                | Cloudy        | .446    | 86.3     | 85.8                  | 82.8                | S. W.    | Cloudy         | 92.6         | 85.7      | 78.8                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | 24 |    |  |
| .352                          | 88.0    | 87.8    | 83.2     | N. E.                       | Cumulo-strati       | .331    | 86.6    | 86.0     | 83.3                 | S. E.                                | Ditto         | .384    | 85.0     | 85.2                  | 82.9                | S. N.    | Ditto          | 93.2         | 83.4      | 78.5                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | 25 |    |  |
| .429                          | 88.3    | 88.4    | 82.6     | S. E.                       | Ditto               | .415    | 88.0    | 87.5     | 81.9                 | S.                                   | Ditto         | .377    | 86.6     | 86.1                  | 82.1                | S. S. E. | Scatd. clouds  | 88.2         | 83.4      | 78.5                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | 26 |    |  |
| .478                          | 87.0    | 87.4    | 82.6     | S.                          | Ditto               | .465    | 86.2    | 84.3     | 82.0                 | S.                                   | Drizzling     | .491    | 84.8     | 84.0                  | 81.3                | S.       | Ditto          | 90.0         | 84.0      | 78.0                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | °  | 27 |  |
| .509                          | 85.3    | 84.9    | 81.5     | S.                          | Cloudy              | .498    | 84.0    | 83.8     | 81.0                 | S.                                   | Raining       | .516    | 83.0     | 83.2                  | 80.0                | S.       | Cloudy         | 89.2         | 83.8      | 78.3                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | °  | 28 |  |
| .544                          | 83.0    | 82.6    | 80.0     | S.                          | Ditto               | .520    | 82.9    | 83.2     | 81.2                 | S. E.                                | Cloudy        | .559    | 83.3     | 83.4                  | 81.3                | S. S. E. | Cloudy         | 88.3         | 82.7      | 77.0                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | °  | 29 |  |
| 29.520                        | 89.4    | 89.5    | 83.2     | .....                       | .....               | 29.497  | 89.3    | 89.3     | 82.8                 | ....                                 | .....         | 29.518  | 87.1     | 86.5                  | 81.8                | .....    | .....          | 91.6         | 84.9      | 78.1                          | °       | °       | °              | °         | °    | °     | °                                | °           | °               | °              | °           | °     | °             | °     | °    | ° | °  | °  | 30 |  |



*Meteorological Register kept at the Surveyor General's Office, Calcutta, for the Month of July, 1852.*

| Date. | Observations made at Sun-rise. |         |          |                   |                   | Maximum Pressure observed at 9 h. 50 m. |              |         |          |                | Observations made at Apparent Noon. |              |         |          |                |
|-------|--------------------------------|---------|----------|-------------------|-------------------|-----------------------------------------|--------------|---------|----------|----------------|-------------------------------------|--------------|---------|----------|----------------|
|       | Temperature.                   |         |          | Wind.             |                   | Bar. red. to 32° F.                     | Temperature. |         |          | Aspect of Sky. | Bar. red. to 32° F.                 | Temperature. |         |          | Aspect of Sky. |
|       | Of Mer.                        | Of Air. | W. Bulb. | Direction at 50m. | Direction at 10m. |                                         | Of Mer.      | Of Air. | W. Bulb. |                |                                     | Of Mer.      | Of Air. | W. Bulb. |                |
| 1     | Inches 29.571                  | 80.3    | 80.3     | S. W.             | Cloudy            | 29.621                                  | 81.2         | 82.3    | 80.2     | Cloudy         | 29.587                              | 85.6         | 87.5    | 82.0     | Cumuli         |
| 2     | .560                           | 79.7    | 79.6     | E. S. E.          | Ditto             | .584                                    | 84.6         | 86.2    | 82.2     | Cirro-strati   | .556                                | 88.3         | 89.0    | 82.4     | Cumulo-strati  |
| 3     | .527                           | 80.7    | 81.0     | S. W.             | Ditto             | .575                                    | 83.5         | 84.4    | 81.0     | Cloudy         | .552                                | 86.1         | 87.0    | 81.8     | S. W. Cloudy   |
| 4 S.  | .534                           | 79.7    | 80.0     | S. W.             | Ditto             | .576                                    | 80.6         | 81.2    | 79.3     | Nimbi          | .554                                | 83.2         | 83.8    | 80.8     | Ditto          |
| 5     | .505                           | 79.5    | 79.8     | N.                | Nimbi             | .538                                    | 83.7         | 84.7    | 82.2     | Cloudy         | .494                                | 86.9         | 83.2    | 82.0     | Cirro-cumuli   |
| 6     | .400                           | 81.0    | 81.4     | E. W.             | Scattered clouds  | .458                                    | 84.0         | 85.2    | 81.2     | Ditto          | .436                                | 86.8         | 87.4    | 81.9     | Cirro-strati   |
| 7     | .369                           | 80.0    | 80.3     | N. W.             | Cloudy            | .414                                    | 83.8         | 86.1    | 82.3     | Cirro-cumuli   | .375                                | 87.6         | 88.4    | 82.3     | Cumulo-strati  |
| 8     | .339                           | 81.3    | 80.6     | S. S. W.          | Ditto             | .359                                    | 82.0         | 81.2    | 81.0     | Cirro-strati   | .326                                | 84.9         | 84.4    | 81.0     | Cloudy         |
| 9     | .310                           | 78.0    | 78.0     | S. S. W.          | Drizzling         | .343                                    | 79.4         | 80.0    | 79.2     | Drizzling      | .323                                | 81.0         | 82.2    | 80.6     | Ditto          |
| 10    | .436                           | 81.0    | 81.3     | S. S. W.          | Scattered clouds  | .530                                    | 83.7         | 85.2    | 82.4     | Cloudy         | .522                                | 85.4         | 86.3    | 83.3     | Ditto          |
| 11 S. | .576                           | 81.6    | 81.8     | S. S. E.          | Ditto             | .629                                    | 86.7         | 88.0    | 83.2     | Cumuli         | .615                                | 88.6         | 89.6    | 83.8     | Cumulo-strati  |
| 12    | .544                           | 82.9    | 82.7     | S.                | Cloudy            | .598                                    | 81.4         | 81.4    | 79.6     | Cloudy         | .595                                | 81.3         | 81.3    | 79.6     | Raining        |
| 13    | .570                           | 80.7    | 80.6     | S. W.             | Ditto             | .643                                    | 80.0         | 80.3    | 79.2     | Raining        | .635                                | 80.0         | 80.4    | 79.0     | Drizzling      |
| 14    | .618                           | 81.4    | 81.6     | S. W.             | Ditto             | .686                                    | 84.4         | 85.6    | 81.9     | Cumulo-strati  | .668                                | 87.5         | 88.2    | 81.0     | Cirro-strati   |
| 15    | .617                           | 79.4    | 79.6     | S. W.             | Ditto             | .689                                    | 82.4         | 84.3    | 80.2     | Cloudy         | .659                                | 85.3         | 86.3    | 81.4     | Cumulo-strati  |
| 16    | .650                           | 79.7    | 79.8     | S. W.             | Ditto             | .712                                    | 81.3         | 82.2    | 79.1     | Ditto          | .703                                | 80.2         | 78.8    | 77.8     | Raining        |
| 17    | .616                           | 79.2    | 79.4     | S. W.             | Ditto             | .674                                    | 82.1         | 83.2    | 79.7     | Ditto          | .649                                | 83.2         | 83.0    | 80.2     | Cloudy         |
| 18 S. | .609                           | 79.5    | 79.6     | S. S. W.          | Ditto             | .659                                    | 83.9         | 85.3    | 81.3     | Cirro-cumuli   | .653                                | 87.0         | 88.3    | 81.6     | Cirro-cumuli   |
| 19    | .662                           | 78.4    | 78.8     | W. S. W.          | Raining           | .719                                    | 79.4         | 80.2    | 78.0     | Drizzling      | .713                                | 81.6         | 82.8    | 79.7     | Cloudy         |
| 20    | .695                           | 77.8    | 77.8     | S. W.             | Drizzling         | .732                                    | 78.6         | 79.3    | 76.8     | Ditto          | .769                                | 80.7         | 81.2    | 78.0     | Drizzling      |
| 21    | .712                           | 80.6    | 80.8     | S.                | Cloudy            | .752                                    | 84.1         | 84.9    | 81.0     | Cumuli         | .725                                | 85.3         | 86.0    | 80.9     | Cumuli         |
| 22    | .678                           | 78.4    | 78.4     | S. S. W.          | Ditto             | .707                                    | 81.2         | 81.6    | 78.0     | Cloudy         | .703                                | 82.9         | 84.0    | 79.3     | Cirro strati   |
| 23    | .692                           | 81.3    | 81.6     | S. W.             | Ditto             | .732                                    | 84.9         | 86.3    | 81.8     | Cumulo-strati  | .695                                | 87.0         | 86.8    | 82.2     | Cumulo-strati  |
| 24    | .710                           | 78.4    | 78.3     | S. E.             | Raining           | .767                                    | 82.9         | 84.1    | 81.2     | Nimbi          | .743                                | 82.9         | 82.4    | 79.4     | Cloudy         |
| 25 S. | .718                           | 78.4    | 78.5     | E.                | Cirro-strati      | .748                                    | 83.3         | 85.0    | 80.3     | Cumulo-strati  | .722                                | 85.2         | 86.3    | 81.3     | Cumulo-strati  |
| 26    | .657                           | 80.2    | 80.6     | S. E.             | Nimbi             | .680                                    | 81.4         | 83.0    | 81.6     | Nimbi          | .645                                | 82.8         | 84.0    | 81.4     | Cumulo-strati  |
| 27    | .575                           | 80.3    | 80.5     | S. E.             | Cirro-strati      | .594                                    | 83.6         | 84.0    | 80.4     | Drizzling      | .563                                | 85.6         | 86.8    | 80.7     | Nimbi          |
| 28    | .563                           | 80.5    | 80.6     | E.                | Cloudy            | .609                                    | 83.8         | 84.2    | 81.3     | Nimbi          | .583                                | 87.2         | 86.0    | 81.3     | Ditto          |
| 29    | .581                           | 80.3    | 79.9     | E.                | Cirro-strati      | .651                                    | 83.8         | 86.0    | 81.6     | Cumulo-strati  | .601                                | 86.9         | 88.3    | 82.8     | Ditto          |
| 30    | .616                           | 80.7    | 80.5     | E. N. E.          | Cloudy            | .651                                    | 84.0         | 85.2    | 81.2     | Ditto          | .645                                | 83.0         | 83.0    | 80.8     | Cloudy         |
| 31    | .622                           | 80.0    | 80.2     | E.                | Cirro-strati      | .656                                    | 84.8         | 86.0    | 80.4     | Ditto          | .616                                | 86.6         | 89.0    | 82.6     | Cumulo-strati  |
| Mean. | 29.575                         | 80.0    | 80.1     | ....              | .....             | 29.623                                  | 82.7         | 83.9    | 80.6     | .....          | 29.600                              | 83.8         | 85.8    | 81.1     | .....          |

*[Meteorological Register, continued.]*

| Observations made at 2 h. 40 m. |      |         |      |         |         |          |      |                      |      | Minimum Pressure observed at 4 p. m. |         |                     |      |         |      |         |         |          |      | Observations made at sun-set. |       |                |   |                     |   |         |   |         |   | Rain Gauges, Elevations. |   |                       |   | Moon's Phases                 |   |                |   |           |   |          |   |       |   |       |   |       |   |          |   |       |   |       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
|---------------------------------|------|---------|------|---------|---------|----------|------|----------------------|------|--------------------------------------|---------|---------------------|------|---------|------|---------|---------|----------|------|-------------------------------|-------|----------------|---|---------------------|---|---------|---|---------|---|--------------------------|---|-----------------------|---|-------------------------------|---|----------------|---|-----------|---|----------|---|-------|---|-------|---|-------|---|----------|---|-------|---|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| Bar. red. to 32° F.             |      | Of Mer. |      | Of Air. |         | W. Bulb. |      | Direction at 4 p. m. |      | Aspect of Sky.                       |         | Bar. red. to 32° F. |      | Of Mer. |      | Of Air. |         | W. Bulb. |      | Direction at 4 p. m.          |       | Aspect of Sky. |   | Bar. red. to 32° F. |   | Of Mer. |   | Of Air. |   | W. Bulb.                 |   | Direction at sun-set. |   | Max. and Minimum Thermometer. |   | In Sun's rays. |   | Feet, 60. |   | Feet, 5. |   | Lower |   | Upper |   | Inch. |   | Feet, 5. |   | Lower |   | Date. |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| 29.533                          | 87.2 | 86.2    | 82.0 | S.      | Raining | 29.536   | 83.2 | 82.0                 | 80.5 | S.                                   | Raining | 29.532              | 80.6 | 81.0    | 79.5 | S.      | Raining | 88.8     | 82.9 | 77.0                          | 105.6 | 0              | 0 | 0                   | 0 | 0       | 0 | 0       | 0 | 0                        | 0 | 0                     | 0 | 0                             | 0 | 0              | 0 | 0         | 0 | 0        | 0 | 0     | 0 | 0     | 0 | 0     | 0 | 0        | 0 | 0     | 0 | 0     | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |

*Meteorological Register kept at the Surveyor General's Office, Calcutta, for the Month of August, 1852.*

| Observations made at Sun-rise. |  |  |  |  |         |  |  |  |  | Maximum Pressure observed at 9 h. 50 m. |  |  |  |  |                        |  |  |  |  | Observations made at Apparent Noon. |  |  |  |  |         |  |  |  |  |                |  |  |  |  |          |  |  |  |  |                    |  |  |  |  |                |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  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| Temperature.                   |  |  |  |  | Wind.   |  |  |  |  | Aspect of Sky.                          |  |  |  |  | Bar. F. to             |  |  |  |  | Temperature.                        |  |  |  |  | Wind.   |  |  |  |  | Aspect of Sky. |  |  |  |  |          |  |  |  |  |                    |  |  |  |  |                |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  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| Of Mer.                        |  |  |  |  | Of Air. |  |  |  |  | W. Bulb.                                |  |  |  |  | Direction at Sun-rise. |  |  |  |  | Bar. F. to                          |  |  |  |  | Of Mer. |  |  |  |  | Of Air.        |  |  |  |  | W. Bulb. |  |  |  |  | Direction at Noon. |  |  |  |  | Aspect of Sky. |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  |  |  |  |   |  | 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° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  | ° |  |  |  |  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# [ Meteorological Register, continued.]

Observations made at 2h. 40m.

Minimum Pressure observed at 4 p.m.

Observations made at sun-set.

Maximum and Minimum Thermometer.

Rain Gauges.

Moons' Phases

| Bar. red. to 32° F. | Temperature. |         |          | Wind.               | Aspect of Sky. | Bar. red. to 32° F. | Temperature. |          |                     | Wind.  | Aspect of Sky. | Maximum and Minimum Thermometer. |       |      | Rain Gauges.    |                | Moons' Phases | Date. |
|---------------------|--------------|---------|----------|---------------------|----------------|---------------------|--------------|----------|---------------------|--------|----------------|----------------------------------|-------|------|-----------------|----------------|---------------|-------|
|                     | Inches       | Of Mer. | W. Bulb. | Direction at 4 p.m. |                |                     | Of Mer.      | W. Bulb. | Direction at 4 p.m. |        |                | Max.                             | Mean. | Min. | Feet. 60. Upper | Feet. 5. Lower |               |       |
| 29.534              | 89.0         | 89.0    | 81.4     | E.S.E.              | Cumulo-strati  | 29.509              | 88.0         | 88.4     | 80.4                | E.N.E. | Cirro-strati   | 90.0                             | 83.2  | 76.4 | Inch. 0.13      | Inch. 0.14     | 1             | 1     |
| 489                 | 91.0         | 92.3    | 81.4     | E.S.E.              | Ditto          | 479                 | 88.0         | 87.3     | 81.8                | E.N.E. | Cumulo-strati  | 92.0                             | 84.7  | 77.3 | 0.14            | 0.14           | 2             | 2     |
| 489                 | 86.6         | 86.0    | 82.2     | E.N.E.              | Cloudy         | 477                 | 84.5         | 84.2     | 82.0                | E.N.E. | Cloudy         | 89.2                             | 83.8  | 78.3 | 0.36            | 0.36           | 3             | 3     |
| 497                 | 84.4         | 85.6    | 81.5     | E.S.E.              | Ditto          | 475                 | 84.8         | 84.8     | 80.9                | S.E.   | Ditto          | 88.2                             | 82.8  | 77.4 | 0.96            | 0.96           | 4             | 4     |
| 480                 | 84.0         | 84.6    | 82.0     | S.E.                | Ditto          | 462                 | 83.2         | 83.3     | 81.2                | E.S.E. | Ditto          | 90.2                             | 83.6  | 77.0 | 1.30            | 1.30           | 5             | 5     |
| 458                 | 82.3         | 83.0    | 80.7     | S.E.                | Ditto          | 455                 | 83.6         | 84.2     | 80.6                | S.E.   | Ditto          | 84.5                             | 80.8  | 77.0 | 0.58            | 0.58           | 6             | 6     |
| 559                 | 82.0         | 82.0    | 79.6     | S.E.                | Drizzling      | 560                 | 80.2         | 79.6     | 78.4                | S.E.   | Drizzling      | 82.8                             | 79.2  | 75.6 | 0.33            | 0.33           | 7             | 7     |
| 605                 | 83.3         | 84.0    | 81.3     | S.E.                | Nimbi          | 579                 | 83.9         | 84.2     | 81.3                | S.E.   | Cloudy         | 84.6                             | 80.2  | 75.8 | 0.85            | 0.85           | 8             | 8     |
| 508                 | 89.7         | 91.0    | 83.3     | N.E.                | Cirro-strati   | 517                 | 88.6         | 88.4     | 80.6                | S.E.   | Cloudy         | 91.2                             | 84.0  | 77.4 | 1.03            | 1.03           | 9             | 9     |
| 480                 | 89.3         | 90.2    | 82.6     | N.E.                | Cumulo-strati  | 478                 | 86.3         | 83.8     | 81.4                | N.E.   | Ditto          | 85.4                             | 81.2  | 77.0 | 0.23            | 0.23           | 10            | 10    |
| 469                 | 84.5         | 85.3    | 82.2     | N.                  | Cloudy         | 445                 | 83.6         | 81.8     | 80.6                | S.     | Ditto          | 90.7                             | 84.4  | 78.0 | 0.38            | 0.38           | 11            | 11    |
| 433                 | 86.6         | 84.0    | 81.0     | S.E.                | Raining        | 424                 | 84.7         | 84.2     | 82.2                | N.E.   | Cloudy         | 86.0                             | 81.8  | 77.5 | 0.30            | 0.30           | 12            | 12    |
| 398                 | 89.5         | 90.0    | 83.0     | S.E.                | Cumulo-strati  | 389                 | 88.5         | 85.3     | 82.0                | E.S.E. | Raining        | 90.6                             | 84.8  | 79.0 | 0.26            | 0.26           | 13            | 13    |
| 511                 | 84.8         | 85.3    | 80.4     | S.E.                | Cloudy         | 435                 | 84.5         | 85.0     | 81.2                | S.E.   | Cirro-strati   | 87.8                             | 81.6  | 75.3 | 0.27            | 0.27           | 14            | 14    |
| 637                 | 82.8         | 83.0    | 80.5     | S.E.                | Ditto          | 597                 | 84.9         | 86.5     | 82.0                | S.E.   | Ditto          | 91.2                             | 83.7  | 76.2 | 0.44            | 0.44           | 15            | 15    |
| 603                 | 90.2         | 91.5    | 83.4     | S.E.                | Cumulo-strati  | 569                 | 89.4         | 89.0     | 83.4                | S.S.E. | Cumulo-strati  | 89.2                             | 83.7  | 77.9 | 0.05            | 0.05           | 16            | 16    |
| 596                 | 84.4         | 85.0    | 82.2     | S.E.                | Cloudy         | 575                 | 84.0         | 81.8     | 79.6                | S.     | Raining        | 84.8                             | 81.2  | 77.6 | 0.13            | 0.13           | 17            | 17    |
| 611                 | 83.4         | 83.8    | 81.0     | S.E.                | Ditto          | 584                 | 83.0         | 83.6     | 82.3                | S.E.   | Cloudy         | 86.4                             | 82.5  | 78.5 | 0.38            | 0.38           | 18            | 18    |
| 532                 | 88.3         | 89.0    | 82.7     | E.S.E.              | Cumulo-strati  | 602                 | 82.8         | 82.7     | 80.7                | S.E.   | Scatd. clouds  | 89.7                             | 83.8  | 77.9 | 0.42            | 0.42           | 19            | 19    |
| 676                 | 84.5         | 86.2    | 81.8     | E.                  | Ditto          | 633                 | 85.9         | 85.4     | 81.0                | S.E.   | Cumulo-strati  | 84.8                             | 81.2  | 77.6 | 0.04            | 0.04           | 20            | 20    |
| 658                 | 82.0         | 81.9    | 80.0     | E.S.E.              | Cloudy         | 667                 | 83.7         | 83.8     | 80.6                | S.S.E. | Scatd. clouds  | 86.4                             | 82.5  | 78.5 | 0.14            | 0.14           | 21            | 21    |
| 723                 | 82.8         | 82.8    | 80.0     | E.                  | Cloudy         | 664                 | 82.6         | 82.6     | 79.3                | E.S.E. | Ditto          | 87.2                             | 82.4  | 77.5 | 0.37            | 0.37           | 22            | 22    |
| 694                 | 82.2         | 83.0    | 80.8     | E.                  | Cumulo-strati  | 707                 | 83.0         | 82.8     | 79.9                | S.E.   | Cirro-strati   | 85.0                             | 80.7  | 76.4 | 0.37            | 0.37           | 23            | 23    |
| 683                 | 84.0         | 84.8    | 79.4     | S.W.                | Cloudy         | 689                 | 82.9         | 82.8     | 79.6                | S.     | Scatd. clouds  | 86.7                             | 81.4  | 76.0 | 0.20            | 0.20           | 24            | 24    |
| 706                 | 87.3         | 87.0    | 82.5     | S.                  | Drizzling      | 698                 | 83.4         | 83.4     | 80.6                | S.     | Cumulo-strati  | 86.3                             | 81.3  | 76.2 | 0.20            | 0.20           | 25            | 25    |
| 737                 | 88.4         | 87.4    | 81.4     | S.                  | Cumulo-strati  | 714                 | 83.5         | 83.4     | 80.6                | S.     | Drizzling      | 89.2                             | 82.8  | 76.4 | 0.20            | 0.20           | 26            | 26    |
| 689                 | 88.4         | 88.4    | 83.6     | S.                  | Ditto          | 730                 | 85.6         | 85.0     | 80.0                | S.     | Cirro-strati   | 90.0                             | 83.5  | 77.0 | 0.08            | 0.08           | 27            | 27    |
| 656                 | 87.4         | 87.8    | 82.0     | S.W.                | Cloudy         | 689                 | 83.7         | 82.8     | 80.2                | S.     | Raining        | 90.3                             | 84.4  | 78.4 | 0.10            | 0.10           | 28            | 28    |
| 653                 | 86.2         | 87.2    | 81.6     | w.n.w.              | Cumulo-strati  | 676                 | 85.6         | 84.4     | 81.4                | N.W.   | Ditto          | 88.4                             | 83.6  | 78.7 | 0.28            | 0.28           | 29            | 29    |
| 615                 | 88.5         | 89.6    | 83.2     | N.                  | Ditto          | 634                 | 87.5         | 87.0     | 83.0                | S.     | Drizzling      | 90.3                             | 83.7  | 77.0 | 0.58            | 0.58           | 30            | 30    |
| 610                 | 89.0         | 89.2    | 83.2     | N.                  | Ditto          | 610                 | 86.6         | 86.4     | 82.8                | N.W.   | Scatd. clouds  | 90.6                             | 84.1  | 77.6 | 0.48            | 0.48           | 31            | 31    |
| 589                 | 87.0         | 86.4    | 82.5     | S.W.                | Ditto          | 607                 | 84.7         | 84.2     | 81.3                | E.     | Cirro-strati   | 90.5                             | 83.9  | 77.3 | 0.53            | 0.53           | 32            | 32    |
| 29.584              | 86.0         | 86.4    | 81.7     | ....                | .....          | 29.565              | 85.6         | 85.4     | 81.4                | ....   | .....          | 88.4                             | 82.8  | 77.2 | 9.63            | 9.95           | ..            | ..    |

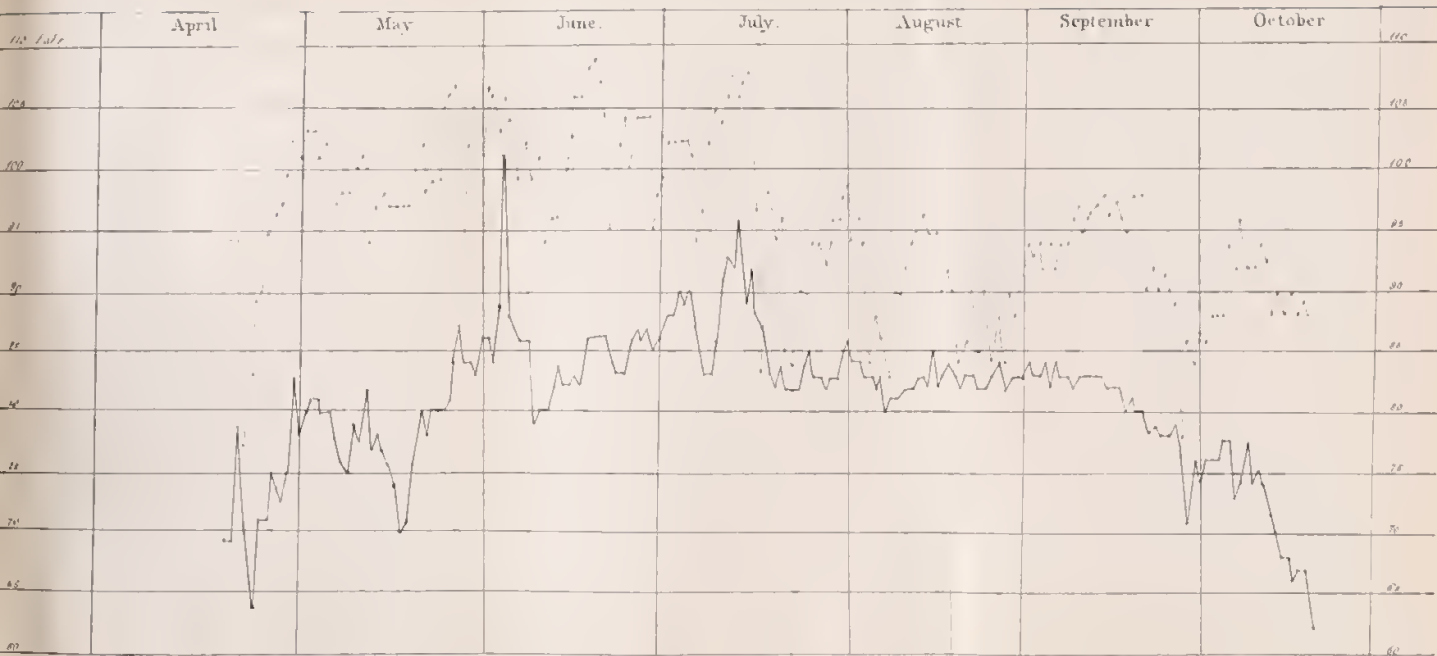
*ological Register kept at the Surveyor General's Office, Calcutta, for the Month of September, 1852.*

| Observations made at Sun-rise. |               |         |          |                        | Maximum Pressure observed at 9 h. 50 m. |                     |              |         |          | Observations made at Apparent Noon. |                |                     |              |         |          |                    |                |
|--------------------------------|---------------|---------|----------|------------------------|-----------------------------------------|---------------------|--------------|---------|----------|-------------------------------------|----------------|---------------------|--------------|---------|----------|--------------------|----------------|
| Date.                          | Temperature.  |         |          | Wind.                  | Aspect of Sky.                          | Bar. red. to 32° F. | Temperature. |         |          | Wind.                               | Aspect of Sky. | Bar. red. to 32° F. | Temperature. |         |          | Wind.              | Aspect of Sky. |
|                                | Of Mer.       | Of Air. | W. Bulb. | Direction at Sun-rise. |                                         |                     | Of Mer.      | Of Air. | W. Bulb. | Direction at 9h50m.                 |                |                     | Of Mer.      | Of Air. | W. Bulb. | Direction at Noon. |                |
| 1                              | Inches 29.684 | 82.0    | 82.2     | 81.0                   | Cirro-strati                            | 29.724              | 85.6         | 87.0    | 82.6     | S. S. E.                            | Cumulo-strati  | 29.697              | 86.7         | 86.6    | 82.8     | N. N. W.           | Cloudy         |
| 2                              | .676          | 82.0    | 82.0     | 80.4                   | Ditto                                   | .714                | 84.9         | 85.9    | 81.3     | S.                                  | Ditto          | .716                | 87.8         | 89.4    | 81.2     | E.                 | Cumulo-strati  |
| 3                              | .657          | 82.4    | 82.3     | 81.2                   | Ditto                                   | .709                | 86.3         | 88.0    | 82.0     | N.                                  | Ditto          | .678                | 89.0         | 91.0    | 82.2     | N.                 | Ditto          |
| 4                              | .557          | 83.8    | 83.8     | 81.5                   | Clear                                   | .583                | 88.0         | 89.8    | 84.2     | N.                                  | Cumuli         | .545                | 91.2         | 93.0    | 85.4     | N. E.              | Ditto          |
| 5                              | .589          | 78.0    | 78.3     | 76.3                   | Drizzling                               | .690                | 79.3         | 79.3    | 78.3     | E. N. E.                            | Raining        | .690                | 79.7         | 80.2    | 78.6     | S. S. E.           | Cloudy         |
| 6                              | .555          | 79.8    | 79.8     | 78.8                   | Scattered clouds                        | .810                | 82.6         | 84.5    | 82.0     | S. E.                               | Cumulo-strati  | .796                | 84.8         | 85.3    | 81.5     | S. S. E.           | Cumulo-strati  |
| 7                              | .759          | 81.5    | 81.5     | 80.8                   | Cirro-strati                            | .796                | 85.2         | 85.8    | 82.3     | S. W.                               | Cumuli         | .760                | 88.0         | 89.8    | 82.8     | W. S. W.           | Ditto          |
| 8                              | .705          | 82.3    | 82.3     | 80.7                   | Ditto                                   | .775                | 85.4         | 86.3    | 83.0     | S. W.                               | Cirro-strati   | .743                | 83.4         | 89.2    | 84.0     | S. W.              | Cloudy         |
| 9                              | .740          | 80.3    | 80.5     | 79.2                   | Cloudy                                  | .831                | 80.2         | 80.4    | 79.5     | S. E.                               | Raining        | .768                | 81.7         | 83.2    | 81.4     | S.                 | Ditto          |
| 10                             | .763          | 79.2    | 79.4     | 79.2                   | Cirro-strati                            | .825                | 84.3         | 85.4    | 81.4     | S. W.                               | Cumuli         | .785                | 87.5         | 88.6    | 83.6     | S. W.              | Cumulo-strati  |
| 11                             | .765          | 79.0    | 79.3     | 78.4                   | Cloudy                                  | .824                | 83.2         | 85.0    | 82.3     | S. S. E.                            | Ditto          | .782                | 87.0         | 89.2    | 83.2     | S. W.              | Cirro-cumuli   |
| 12                             | .771          | 78.9    | 79.1     | 78.1                   | Cirro-strati                            | .829                | 83.4         | 84.6    | 81.7     | S. S. E.                            | Cumulo-strati  | .789                | 86.0         | 87.7    | 82.3     | S. E.              | Cumulo-strati  |
| 13                             | .733          | 80.0    | 80.2     | 79.4                   | Ditto                                   | .812                | 84.0         | 85.5    | 81.6     | E.                                  | Cumuli         | .763                | 86.0         | 87.8    | 82.5     | S. E.              | Cumuli         |
| 14                             | .717          | 80.8    | 80.8     | 79.8                   | Ditto                                   | .765                | 85.4         | 86.8    | 80.5     | E.                                  | Cumulo-strati  | .722                | 83.0         | 89.0    | 81.2     | E. S. E.           | Cumulo strati  |
| 15                             | .711          | 81.0    | 81.0     | 79.8                   | Ditto                                   | .770                | 85.6         | 86.8    | 81.1     | E. S. E.                            | Cumuli         | .730                | 88.0         | 89.2    | 81.6     | S. S. E.           | Ditto          |
| 16                             | .689          | 81.0    | 81.3     | 80.0                   | Clear                                   | .742                | 85.7         | 87.5    | 81.5     | E.                                  | Cumulo-strati  | .693                | 88.4         | 89.8    | 82.6     | E.                 | Ditto          |
| 17                             | .646          | 81.4    | 81.4     | 80.3                   | Cirro-strati                            | .675                | 86.0         | 87.3    | 81.7     | E.                                  | Cirro-strati   | .646                | 89.0         | 90.5    | 82.6     | E.                 | Ditto          |
| 18                             | .541          | 82.0    | 82.6     | 81.4                   | Ditto                                   | .559                | 86.4         | 88.2    | 83.8     | N.                                  | Ditto          | .522                | 89.0         | 90.3    | 83.6     | N. W.              | Cloudy         |
| 19                             | .456          | 79.8    | 80.0     | 78.6                   | Drizzling                               | .472                | 80.0         | 79.9    | 78.9     | S. S. W.                            | Raining        | .433                | 80.6         | 80.5    | 79.4     | W.                 | Raining        |
| 20                             | .484          | 79.4    | 79.0     | 78.2                   | Raining                                 | .589                | 79.6         | 80.2    | 79.0     | S. S. W.                            | Drizzling      | .564                | 80.6         | 81.4    | 79.7     | S. W.              | Cloudy         |
| 21                             | .688          | 82.2    | 82.2     | 81.2                   | Scattered clouds                        | .750                | 85.2         | 86.3    | 82.6     | S. S. W.                            | Cirro-cumuli   | .721                | 88.3         | 89.4    | 84.3     | S. S. W.           | Cumuli         |
| 22                             | .724          | 82.2    | 82.2     | 81.5                   | Cirro-strati                            | .761                | 85.8         | 87.2    | 82.8     | E. S. E.                            | Cumulo-strati  | .712                | 88.3         | 89.7    | 82.2     | S. E.              | Ditto          |
| 23                             | .666          | 81.5    | 81.6     | 80.5                   | Ditto                                   | .728                | 85.6         | 87.2    | 81.6     | E. N. E.                            | Ditto          | .664                | 88.3         | 90.4    | 83.3     | N. E.              | Cumulo-strati  |
| 24                             | .687          | 81.6    | 81.8     | 80.6                   | Cumuli                                  | .750                | 85.0         | 86.3    | 81.4     | E. N. E.                            | Ditto          | .716                | 87.8         | 89.0    | 81.6     | E. N. E.           | Ditto          |
| 25                             | .720          | 79.6    | 79.8     | 79.8                   | Scattered clouds                        | .769                | 83.7         | 85.3    | 80.6     | E. N. E.                            | Ditto          | .731                | 84.4         | 85.2    | 81.7     | N. N. E.           | Ditto          |
| 26                             | .740          | 79.4    | 79.5     | 78.5                   | Cloudy                                  | .798                | 83.4         | 84.2    | 81.3     | E. S. E.                            | Ditto          | .769                | 84.6         | 84.6    | 81.3     | N. E.              | Cloudy         |
| 27                             | .780          | 80.4    | 80.6     | 79.7                   | Ditto                                   | .834                | 85.3         | 86.5    | 81.6     | S. E.                               | Ditto          | .790                | 83.0         | 89.0    | 82.0     | S.                 | Cumuli         |
| 28                             | .753          | 79.8    | 80.0     | 78.6                   | Clear                                   | .815                | 85.3         | 86.4    | 80.6     | S. S. E.                            | Cumuli         | .774                | 88.0         | 89.2    | 81.6     | S.                 | Ditto          |
| 29                             | .770          | 80.3    | 80.3     | 79.0                   | Ditto                                   | .820                | 86.0         | 87.3    | 81.4     | S. E.                               | Cumulo-strati  | .783                | 88.3         | 89.0    | 83.4     | S.                 | Cumulo-strati  |
| 30                             | .815          | 81.4    | 81.6     | 80.3                   | Cumuli                                  | .874                | 83.1         | 83.8    | 81.4     | S.                                  | Cirro-cumuli   | .837                | 84.3         | 86.6    | 83.3     | S. W.              | Cirro-strati   |
| Mean.                          | 29.691        | 80.8    | 80.9     | 79.7                   | .....                                   | 29.747              | 84.3         | 85.5    | 81.5     | ....                                | .....          | 29.711              | 86.6         | 87.8    | 82.2     | ....               | .....          |



*[Meteorological Register, continued.]*

| Observations made at 2h. 40m. |      |              |         |          |                     |                |  |                     |      | Minimum Pressure observed at 4 p. m. |         |          |                       |                |  |                     |      |              |         | Observations made at sun-set. |           |                |  |      |       |      |       |        |             | Maximum and Minimum Thermometer. |       |             |       | Rain Gauges, |  | Moon's Phases |  |
|-------------------------------|------|--------------|---------|----------|---------------------|----------------|--|---------------------|------|--------------------------------------|---------|----------|-----------------------|----------------|--|---------------------|------|--------------|---------|-------------------------------|-----------|----------------|--|------|-------|------|-------|--------|-------------|----------------------------------|-------|-------------|-------|--------------|--|---------------|--|
| Bar. red. to 32° F.           |      | Temperature. |         | Wind.    |                     | Aspect of Sky. |  | Bar. red. to 32° F. |      | Temperature.                         |         | Wind.    |                       | Aspect of Sky. |  | Bar. red. to 32° F. |      | Temperature. |         | Wind.                         |           | Aspect of Sky. |  | Max. |       | Min. |       | Therm. |             | in Sun's rays.                   |       | Elevations. |       | Feet.        |  | Date.         |  |
| Inches.                       |      | Of Mer.      | Of Air. | W. Bulb. | Direction at 4 p.m. |                |  | Inches.             |      | Of Mer.                              | Of Air. | W. Bulb. | Direction at Sun-set. |                |  | Inches.             |      | Of Mer.      | Of Air. | W. Bulb.                      | Direction |                |  | Max. | Mean. | Min. | Max.  | Upper  | Lower       | Inch.                            | Feet. | Upper       | Lower |              |  |               |  |
| 29.622                        | 88.3 | 89.4         | 82.4    | ○        | S.                  | Cumulo-strati  |  | 29.618              | 89.6 | 90.2                                 | 82.7    | ○        | S.                    | Cirro-strati   |  | 29.631              | 87.0 | 86.9         | 82.6    | ○                             | S. E.     | Cloudy         |  | 90.6 | 84.8  | 79.0 | ○     | 109.8  | ..          | 1                                |       |             |       |              |  |               |  |
| .656                          | 90.4 | 91.4         | 82.8    | E.N.E.   |                     | Ditto          |  | .636                | 87.4 | 85.6                                 | 82.3    | E.S.E.   |                       | Cloudy         |  | .636                | 84.8 | 81.8         | 81.6    | S. E.                         |           | Ditto          |  | 91.6 | 85.1  | 78.5 | ..    | 111.8  | ..          | 2                                |       |             |       |              |  |               |  |
| .593                          | 90.8 | 91.3         | 82.0    | N.N.E.   |                     | Cirro-strati   |  | .555                | 90.4 | 91.0                                 | 83.8    | N. E.    |                       | Cirro-strati   |  | .554                | 89.0 | 88.7         | 83.6    | E.S.E.                        |           | Clear          |  | 92.2 | 85.8  | 79.4 | ..    | 111.8  | Ap. Oh.p.m. | 3                                |       |             |       |              |  |               |  |
| .490                          | 87.6 | 87.0         | 81.4    | E.       |                     | Cloudy         |  | .469                | 89.0 | 89.9                                 | 81.6    | E.N.E.   |                       | Ditto          |  | .518                | 86.0 | 85.4         | 79.0    | N. E.                         |           | Scatd. clouds  |  | 92.8 | 86.8  | 80.7 | 1.93  | 106.4  | ..          | 4                                |       |             |       |              |  |               |  |
| .674                          | 78.4 | 78.1         | 77.3    | E.       |                     | Raining        |  | .669                | 77.8 | 77.8                                 | 76.8    | E.       |                       | Drizzling      |  | .664                | 78.4 | 78.4         | 77.6    | S.                            |           | Ditto          |  | 81.6 | 77.6  | 73.5 | 1.40  | 83.5   | ..          | 5                                |       |             |       |              |  |               |  |
| .730                          | 85.6 | 86.1         | 82.1    | S.S.E.   |                     | Cirro-strati   |  | .710                | 87.0 | 87.0                                 | 82.3    | ○        | S.                    | Cloudy         |  | .727                | 84.5 | 84.4         | 81.8    | E.                            |           | Cirro-strati   |  | 88.2 | 80.9  | 73.5 | 106.2 | ..     | 6           |                                  |       |             |       |              |  |               |  |
| .682                          | 89.6 | 91.0         | 83.4    | S.       |                     | Cumulo-strati  |  | .662                | 90.5 | 92.0                                 | 83.7    | W.       |                       | Cumulo-strati  |  | .661                | 90.0 | 89.3         | 83.8    | S.                            |           | Ditto          |  | 90.5 | 84.8  | 79.0 | 112.8 | ..     | 7           | Oh. A.M.                         |       |             |       |              |  |               |  |
| .640                          | 89.2 | 89.0         | 88.9    | S.W.     |                     | Cloudy         |  | .625                | 88.6 | 88.2                                 | 83.0    | S.W.     |                       | Cloudy         |  | .689                | 81.2 | 80.3         | 78.2    | S.                            |           | Overcast       |  | 90.5 | 84.8  | 79.0 | 112.8 | ..     | 8           |                                  |       |             |       |              |  |               |  |
| .754                          | 78.6 | 78.2         | 76.6    | S. W.    |                     | Raining        |  | .763                | 78.4 | 77.6                                 | 76.3    | W.       |                       | Drizzling      |  | .758                | 77.4 | 77.8         | 76.8    | E.                            |           | Drizzling      |  | 85.0 | 79.8  | 74.6 | 95.0  | 2.44   | 9           |                                  |       |             |       |              |  |               |  |
| .685                          | 89.8 | 88.6         | 83.3    | S.       |                     | Cumuli         |  | .680                | 87.8 | 87.6                                 | 81.6    | S.       |                       | Cirro-strati   |  | .759                | 79.9 | 77.4         | 75.8    | W.                            |           | Raining        |  | 89.8 | 81.9  | 73.9 | 105.8 | 0.56   | 10          |                                  |       |             |       |              |  |               |  |
| .698                          | 89.0 | 89.3         | 82.4    | S.S.W.   |                     | Cumulo-strati  |  | .699                | 86.3 | 83.2                                 | 80.0    | S.       |                       | Raining        |  | .729                | 82.3 | 82.8         | 81.3    | S. S. E.                      |           | Cloudy         |  | 90.6 | 82.6  | 74.6 | 108.0 | 0.16   | 11          |                                  |       |             |       |              |  |               |  |
| .705                          | 86.2 | 85.7         | 81.0    | W.S.W.   |                     | Cloudy         |  | .706                | 81.9 | 80.5                                 | 78.7    | NNW      |                       | Ditto          |  | .705                | 81.3 | 81.3         | 79.8    | S. E.                         |           | Ditto          |  | 88.9 | 82.0  | 75.0 | 108.4 | 2.22   | 12          |                                  |       |             |       |              |  |               |  |
| .675                          | 87.2 | 85.4         | 82.2    | S.S.E.   |                     | Drizzling      |  | .666                | 86.5 | 86.6                                 | 82.3    | S.S.E.   |                       | Cloudy         |  | .670                | 86.4 | 85.8         | 81.6    | S.                            |           | Cirro-strati   |  | 89.0 | 83.0  | 76.9 | 108.8 | ..     | 13          | 5h. A.M.                         |       |             |       |              |  |               |  |
| .657                          | 88.4 | 89.0         | 82.4    | N. E.    |                     | Cumuli         |  | .636                | 88.0 | 88.6                                 | 82.0    | S. W.    |                       | Cumulo-strati  |  | .649                | 86.0 | 84.4         | 81.4    | S.                            |           | Scatd. clouds  |  | 90.4 | 84.0  | 77.6 | 111.0 | 0.19   | 14          | Per 4h.p.m.                      |       |             |       |              |  |               |  |
| .666                          | 88.3 | 87.6         | 82.3    | N.       |                     | Cumulo-strati  |  | .648                | 89.0 | 89.2                                 | 82.4    | N. E.    |                       | Cumulo-strati  |  | .612                | 86.0 | 85.4         | 82.3    | S.S.W.                        |           | Scatd. clouds  |  | 91.2 | 84.6  | 78.0 | 109.4 | 0.42   | 15          |                                  |       |             |       |              |  |               |  |
| .606                          | 85.4 | 84.7         | 82.3    | S.S.E.   |                     | Cloudy         |  | .606                | 85.4 | 84.7                                 | 82.3    | E.S.E.   |                       | Ditto          |  | .554                | 85.5 | 84.8         | 80.3    | S.                            |           | Ditto          |  | 91.6 | 84.9  | 78.2 | 110.4 | ..     | 16          |                                  |       |             |       |              |  |               |  |
| .553                          | 90.3 | 90.3         | 83.0    | N. E.    |                     | Cumuli         |  | .429                | 88.0 | 88.2                                 | 79.3    | E.       |                       | Cirro-strati   |  | .429                | 88.0 | 85.2         | 79.3    | S. E.                         |           | Raining        |  | 91.0 | 85.1  | 79.2 | 111.6 | 3.47   | 17          |                                  |       |             |       |              |  |               |  |
| .438                          | 90.0 | 90.9         | 83.4    | N. E.    |                     | Cirro-strati   |  | .351                | 82.5 | 83.8                                 | 81.4    | S.S.W.   |                       | Nimbi          |  | .368                | 82.2 | 81.4         | 79.4    | N. E.                         |           | Cloudy         |  | 83.8 | 80.2  | 76.6 | 91.3  | 3.63   | 18          |                                  |       |             |       |              |  |               |  |
| .357                          | 81.5 | 82.4         | 80.7    | W.       |                     | Drizzling      |  | .599                | 81.0 | 81.3                                 | 80.0    | S.       |                       | Overcast       |  | .599                | 81.0 | 81.3         | 80.0    | S. S. E.                      |           | Cloudy         |  | 83.0 | 79.3  | 75.6 | 85.6  | 0.10   | 19          |                                  |       |             |       |              |  |               |  |
| .560                          | 82.4 | 83.0         | 80.4    | S.S.W.   |                     | Cloudy         |  | .530                | 81.6 | 81.4                                 | 80.0    | S. W.    |                       | Cumuli         |  | .674                | 88.0 | 87.2         | 83.1    | S.                            |           | Ditto          |  | 83.0 | 79.3  | 75.6 | 85.6  | 0.10   | 20          | 7h. p.m.                         |       |             |       |              |  |               |  |
| .651                          | 90.2 | 91.2         | 85.8    | S.       |                     | Cumuli         |  | .602                | 90.5 | 90.7                                 | 83.3    | N.N.E.   |                       | Cloudy         |  | .630                | 83.6 | 83.2         | 79.8    | S.S.E.                        |           | Cirro-strati   |  | 91.4 | 84.5  | 77.6 | 110.8 | ..     | 21          |                                  |       |             |       |              |  |               |  |
| .616                          | 90.3 | 91.7         | 83.6    | N. E.    |                     | Ditto          |  | .578                | 86.2 | 86.2                                 | 82.4    | E.       |                       | Ditto          |  | .615                | 84.8 | 84.1         | 80.6    | N. E.                         |           | Scatd. clouds  |  | 92.0 | 85.5  | 79.0 | 112.5 | ..     | 22          |                                  |       |             |       |              |  |               |  |
| .583                          | 88.0 | 86.8         | 82.8    | S. E.    |                     | Cloudy         |  | .647                | 80.2 | 80.4                                 | 79.0    | E.       |                       | Drizzling      |  | .673                | 80.2 | 80.3         | 78.4    | N. E.                         |           | Ditto          |  | 90.8 | 84.6  | 78.4 | 107.3 | 0.86   | 23          |                                  |       |             |       |              |  |               |  |
| .678                          | 80.5 | 79.8         | 77.8    | E.       |                     | Raining        |  | .647                | 80.2 | 80.4                                 | 79.0    | E.       |                       | Cloudy         |  | .696                | 80.5 | 81.2         | 79.0    | N. E.                         |           | Ditto          |  | 86.4 | 81.5  | 76.5 | 99.0  | 0.27   | 24          |                                  |       |             |       |              |  |               |  |
| .684                          | 81.8 | 81.0         | 79.6    | E.       |                     | Cloudy         |  | .653                | 80.6 | 80.7                                 | 78.5    | E.N.E.   |                       | Cloudy         |  | .707                | 83.0 | 83.0         | 79.6    | N. E.                         |           | Scatd. clouds  |  | 88.2 | 82.2  | 76.2 | 103.7 | ..     | 25          |                                  |       |             |       |              |  |               |  |
| .691                          | 86.7 | 88.3         | 82.3    | E.S.E.   |                     | Cumulo-strati  |  | .689                | 85.5 | 84.7                                 | 81.4    | S. E.    |                       | Ditto          |  | .718                | 86.8 | 86.2         | 81.3    | S. E.                         |           | Cumuli         |  | 89.9 | 83.7  | 77.4 | 108.3 | ..     | 26          |                                  |       |             |       |              |  |               |  |
| .721                          | 89.0 | 89.7         | 80.9    | S.       |                     | Cumuli         |  | .709                | 89.0 | 89.5                                 | 81.0    | S. E.    |                       | Ditto          |  | .699                | 86.8 | 86.0         | 81.2    | S. S.                         |           | Cirro-strati   |  | 90.4 | 83.5  | 76.5 | 107.7 | ..     | 27          |                                  |       |             |       |              |  |               |  |
| .695                          | 88.4 | 89.2         | 82.0    | S.       |                     | Ditto          |  | .687                | 88.4 | 88.2                                 | 81.3    | S.       |                       | Ditto          |  | .747                | 85.8 | 85.0         | 80.9    | S.                            |           | Ditto          |  | 90.2 | 83.6  | 77.0 | 105.3 | 0.47   | 28          | Oh. P.M.                         |       |             |       |              |  |               |  |
| .732                          | 87.0 | 87.9         | 82.6    | S.S.E.   |                     | Cumulo-strati  |  | .725                | 87.6 | 83.3                                 | 82.4    | S.       |                       | Ditto          |  | .775                | 85.2 | 85.6         | 82.6    | S.                            |           | Ditto          |  | 89.5 | 84.0  | 78.4 | 104.8 | ..     | 29          |                                  |       |             |       |              |  |               |  |
| .766                          | 88.2 | 89.2         | 83.3    | S.       |                     | Cirro-cumuli   |  | .762                | 88.0 | 87.4                                 | 83.0    | S.       |                       | Cloudy         |  |                     |      |              |         |                               |           |                |  |      |       |      |       | ..     | 30          |                                  |       |             |       |              |  |               |  |
| 29.631                        | 86.4 | 86.4         | 81.5    | ....     |                     | .....          |  | 29.650              | 84.3 | 83.7                                 | 80.5    | ....     |                       | .....          |  | 29.650              | 84.3 | 83.7         | 80.5    | ....                          |           | .....          |  | 89.4 | 83.3  | 77.1 | 105.9 | 19.66  | ..          |                                  |       |             |       |              |  |               |  |
| 29.643                        | 87.0 | 87.2         | 81.8    | ....     |                     | .....          |  |                     |      |                                      |         |          |                       |                |  |                     |      |              |         |                               |           |                |  |      |       |      | 20.41 | ..     |             |                                  |       |             |       |              |  |               |  |



The Thermometer was carefully guarded from the effects of radiation or reflection of heat, and well shaded, but in a South Verandah the house stands outside the intermediate fire from trees or buildings, on the edge of an open plain.

The dotted line gives the temperature at 3 P.M. the black  
V. black line d° at 5 A.M. Min } of the 24 hours

Charles Fickling









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